

MEDICAL STUDENT ATTITUDES TOWARD OLDER PATIENTS:
PREDICTORS AND CONSEQUENCES

1989

WILCOX

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ABSTRACT

Title of Dissertation: Medical Student Attitudes Toward Older Patients: Predictors and Consequences

Victoria Wilcox, Doctor of Philosophy, 1989

Dissertation directed by: Sheryle J. Gallant, Ph.D., Associate Professor, Department of Medical Psychology

The attitudes of medical students toward older patients were examined using an experimental, between-subjects design. The effects of patient age, gender, and symptoms of depression on medical student beliefs, attitudes, behavioral intentions, and behavior toward patients were studied. Subjects were 88 advanced medical students who were unaware of the purpose of the study. Each student listened to one of eight audiotaped portrayals of a patient presenting his or her symptoms. The patient was either 32 or 67 years old, male or female, and depressed or not depressed. Each portrayal followed the same basic script, except that depressed patients complained of additional symptoms of weight loss and early morning awakening. Subjects completed questionnaires assessing their attitudes toward the patient, their beliefs concerning the patient's emotional and physical health, their intentions for evaluating and treating the patient, and their recall of information presented by the patient. While the patient characteristics did not influence attitudes toward the patient, they did influence beliefs, intentions, and behavior. Referral to a nonpsychiatric physician was rated more likely for older than for younger patients. Medical students rated

males as more seriously ill than females and were more likely to recommend laboratory tests for males than for females. In contrast, medical students rated medication as more likely for female than for male patients. They rated depressed patients as more seriously ill than nondepressed patients. Recall of symptoms presented was better for depressed than nondepressed patients, suggesting that medical students listened more attentively to the depressed patients. Counseling and reassurance were considered more likely for depressed females than for depressed males. A consultation with a nonpsychiatric physician was considered more likely for depressed males than for other patients. Medical students who were more psychosocially oriented expressed more positive attitudes toward both older and younger patients. Geriatric Medicine was rated low in prestige, suggesting one possible reason for medical students' lack of interest in Geriatrics. Medical educators interested in improving the quality of medical care for older patients should focus on increasing medical students' awareness about psychosocial aspects of patient care.

MEDICAL STUDENT ATTITUDES TOWARD OLDER PATIENTS:
PREDICTORS AND CONSEQUENCES

by

Victoria Wilcox

Dissertation submitted to the Faculty
of the Department of Medical Psychology
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Chapter 1

Introduction

In 1969, Butler coined the term "ageism" to describe prejudice by members of one age group toward members of another age group, usually the elderly. In support of Butler's contention that ageism exists, several reviewers have concluded that attitudes toward older people tend to be negative (Bader, 1980; Bennett & Eckman, 1973; Green, 1981; McTavish, 1971). Not all reviewers agree, however. Lutsky (1980) concluded that the literature does not support the existence of a strong negative stereotype of older people, although it does suggest devaluation of the elderly relative to other age groups.

Professionals engaged in the delivery of health and social services have been reported to hold negative attitudes toward the elderly (Bader, 1980). Anecdotal reports suggest that elderly patients in academic medical settings are commonly referred to by perjorative names, such as "gomers," "crocks," or "turkeys" (Holtzman, Beck, & Coggan, 1978; Lieff, 1982; Wilson & Hafferty, 1983). Elderly patients with multiple chronic ailments are often considered bad teaching cases (Lieff, 1982).

The attitudes of physicians toward older people are especially significant given that the elderly are the primary users of medical care. In the United States, older people comprise about 11 percent of the population and are its fastest growing age segment (Pegels, 1981). About 85 percent

of individuals age 65 and over suffer from at least one chronic condition, and many have multiple chronic ailments. Compared to adults under age 65, older people have much higher hospitalization rates, longer lengths of hospital stay, and a greater frequency of physician visits (Cole, 1979). They account for 29 percent of national health care expenditures (Pegels, 1981). Despite the need of older people for health care, insufficient numbers of physicians are trained and willing to work with elderly patients (Kane, Solomon, Beck, Keeler, & Kane, 1980).

This dissertation reviews the research assessing the attitudes of physicians and medical students toward older patients and presents a study that examines the nature and determinants of attitudes of medical students toward patients of different ages. Furthermore, it investigates the possibility that attitudes toward older patients influence medical student behavior.

Attitudes, Beliefs, Intentions, and Behavior

Much of the research assessing the attitudes of medical students and physicians toward older people lacks an adequate conceptual basis. "Attitude" is seldom defined, and the term is variously used to refer to cognitions, evaluations on an affective dimension, behavioral intentions, self-reported behavior, or actual behavior. In this paper, "attitude" refers to "a learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object" (Fishbein & Azjen, 1975, p. 6).

The conceptual model proposed by Fishbein and Azjen (1975) postulates a link between attitudes, beliefs, behavioral intentions, and behavior. In this model, beliefs, which consist of the information a person has about a given object, are the basic unit from which attitudes are derived. Beliefs are based on direct observations, inferential knowledge, and information accepted as veridical from outside sources. Attitudes are a function of the beliefs that an object has particular attributes and the evaluation of those attributes. Attitudes, in turn, are the primary determinants of behavioral intentions. A behavioral intention is the person's belief concerning the likelihood that he or she will respond to a particular object in a particular way. A person's intention to perform a behavior is a function of his or her attitude toward the behavior and the subjective norm regarding that behavior. The subjective norm is determined by the person's belief as to whether his or her reference group thinks he or she should perform the behavior and the person's motivation to comply with the referent group. While an attitude is not assumed to determine any given intention, it is assumed to influence the general degree of favorability expressed by the person's set of behavioral intentions toward the object. One reason that attitudes and intentions as measured in any given study may not be highly related is that attitudes and intentions may be measured at various levels of specificity. For example, a study might assess attitudes toward older people in general and behavioral intentions

regarding visiting one's grandmother. When attitudes and intentions are measured at different degrees of specificity, a high correlation between the two is unlikely. Behavioral intentions guide behavior, or observable acts. While any given behavioral intention may not predict a given behavior, in general, the set of behavioral intentions toward a particular stimulus object is likely to predict the set of behaviors toward that object. The Fishbein and Azjen model provides a framework from which to explore the beliefs, attitudes, behavioral intentions, and behavior of medical students and physicians toward older people.

Beliefs about Older People

Two studies examined the beliefs of medical students toward older people using the Palmore (1977) Facts on Aging Quiz. The scale consists of 25 factual statements concerning older people which the respondent classifies as true or false. A score is determined based on the number of incorrect responses. In one study (Holtzman, Beck, & Ettinger, 1981), a sample of 283 first-year and third-year medical and dental students answered approximately one-third of the items incorrectly. Third-year medical students, who had completed required geriatrics training, missed significantly fewer items than first-year medical students, suggesting that, through their training, they had learned some accurate facts about the elderly.

In another study (Perrotta, Perkins, Schimpfhauser, & Calkins, 1981), 127 entering medical students answered a

mean 38 percent of the items incorrectly. While these studies indicate that many of the beliefs held by medical students regarding the elderly are erroneous, they do not indicate the content of their beliefs nor how their beliefs might influence medical student behavior. Some of the beliefs of medical students and physicians regarding older people will become apparent in the following discussion of studies that purport to measure attitudes toward older people. Because of the diversity of measurement techniques and the lack of an adequate conceptual basis for this body of research, it is frequently difficult to distinguish between beliefs and attitudes in a given study.

Throughout the following discussion, it is important to keep in mind that little is known about whether the attitudes of medical students and physicians differ from those held by other groups of individuals. The attitudes of medical students and physicians toward older people may reflect the values of the society in which they live. Alternatively, the attitudes of these medical practitioners may differ from those of the general public by virtue of self-selection or shared experiences.

Attitudes About Aging and Older People in General

Some investigators have examined physician and medical student attitudes toward older people in general; others have more specifically focused on attitudes toward older patients and geriatric medicine. Since research suggests that attitudes toward the elderly are not unidimensional (Kilty &

Feld, 1976), each of these lines of research will be reviewed separately; subsequently, research examining relationships between these attitudinal domains will be discussed.

Physician Attitudes Toward Older People

The attitudes of 435 psychiatrists toward aging and the elderly were assessed in one study (Cyrus-Lutz & Gaitz, 1972) using a sentence completion instrument (Golde & Kogan, 1959). The responses of the psychiatrists were compared to those of the undergraduate students surveyed by Golde and Kogan (1959). The responses of each student were coded into categories by two independent judges, who agreed with each other on 83 percent of the classifications. The responses of the psychiatrists were coded using the same categories; however, the investigators did not indicate the number of judges or the reliability of the classifications. When asked to respond to the item, "When I am with an old person, I . . . , " 45% of the psychiatrists either refused to answer or misread the sentence stem. None of the students misread this item, nor were any of the other items misread. The authors speculate that this item may have provoked more anxiety and conflict than the others. An equally plausible explanation is that the psychiatrists found the question difficult to answer because factors in addition to age influence their responses to older people. When asked to describe their feelings about growing old themselves, psychiatrists were less likely than the students to directly express negative feelings (e.g., fear of becoming old) but were more likely to be

evasive (e.g., "I have never thought of it"). One methodological shortcoming of this study is that a number of years appear to have elapsed between the testing of the two groups. Consequently, changes in attitudes toward the elderly over time cannot be ruled out as a potential explanation for the between-group differences reported.

Subsequent research (Holtzman et al., 1978; Holtzman, Beck, Hodgetts, Coggan, & Ryan, 1977) suggests that physicians and medical students have more positive attitudes toward the elderly than aides and orderlies. The attitudes of four groups -- 15 family practice residents, 16 medical students, 10 nurses at a nursing home, and 35 aides and orderlies at a nursing home -- were assessed using 7-point scales. The medical students, residents, and nurses expressed slightly positive general attitudes toward older people, while the attitudes of the aides and orderlies were slightly negative. Medical students expressed the most positive attitudes. The differences in attitudes among these groups may be due to differences in the types of interactions with elderly patients. It may be that the greater the involvement in the personal hygiene of these patients, some of whom might be incontinent or unable to eat without spilling food on themselves, the poorer the attitudes. Aides and orderlies would be more involved than physicians and medical students in the daily personal care of the patients.

Medical Student Attitudes Toward Older People

Another study that assessed the attitudes of medical students toward older people in general is that of Spence and associates (Spence, Feigenbaum, Fitzgerald, & Roth, 1968), who administered questionnaires about the aged to 92 first-year and 46 senior medical students. Students, when asked to compare "old" with "adults" and "youth," indicated that they perceived older people as very powerful politically, but more emotionally ill, economically burdensome, disagreeable, inactive, dependent, dissatisfied, and socially undesirable. First-year and senior medical students did not differ in their stereotypes of the aged. While some of their perceptions are accurate, others are not. Older people do exert great political clout (Brotman, 1977) and are less active than younger people (Havighurst, 1961). However, they do not seem to be more emotionally ill than younger people (Murphy, Olivier, Monson, Sobol, Leighton, 1988; Myers et al., 1984). It is not clear what is meant by economically burdensome, although younger adults may resent the designation of an ever-increasing proportion of their paychecks for taxes to support the Social Security program (Taylor, 1986). Older people who are disagreeable may be those who were disagreeable when younger, since some research suggests that personality remains stable throughout adulthood (Costa & McCrae, 1980; Reedy, 1983). Older people may become dependent on others as a result of economic need, physical disability, mental impairment, the loss of significant others, or other factors

(Blenker, 1969, cited in Kalish, 1982). The notion that older people are more dissatisfied than younger adults may have some basis in reality, since research indicates that subjective well-being declines as a function of factors commonly associated with age--such as declining health, decreased financial resources, physical disability, and loss of spouse and friends (Larson, 1978). However, some groups of older people are quite high in subjective well-being (Campbell, 1976). The view of older people as socially undesirable may simply reflect the devaluation of older people that is characteristic of our society (Bader, 1980; Bennett & Eckman, 1973; Green, 1981; Lutsky, 1980; McTavish, 1971).

Further evidence that medical students hold negative views concerning older people comes from another study (Perrotta et al., 1981). In this study, 127 entering medical students completed the Kogan Attitudes Toward Old People scale (Kogan, 1961). This questionnaire consists of 17 negative and 17 matched positive Likert items describing old people. A score of 68 represents a neutral attitude, and higher scores indicate more negative attitudes toward the elderly. The mean score of the medical students was 81, and individual scores ranged from 34 to 170. Thus, the students expressed slightly negative attitudes toward the elderly.

In contrast to the above two studies, Holtzman and colleagues (Holtzman et al., 1981) found that first-year and third-year medical students have slightly positive general attitudes toward older people. These studies suggest that

the views of physicians and medical students regarding older people range from negative to slightly positive.

Attitudes toward Older Patients and Geriatric Medicine

While studies describing the attitudes of medical students and physicians toward older people in general are interesting in their own right, research examining the attitudes of these groups toward older patients and geriatric medicine are the most germane to concerns over the quality of health care available to older patients.

Physician Attitudes Toward Older Patients

Two studies assessed the attitudes of family practice residents toward older patients. Using a 29-item Likert-type questionnaire they developed, Maxwell and Sullivan (1980) found that their sample of 150 family practice residents expressed predominantly positive attitudes. The residents felt that treating older patients was cost-effective and involved an acceptable expenditure of time and energy. While they indicated that older patients could respond to treatment, they complained that their medical training had inadequately prepared them for treating the elderly.

In another study (Holtzman et al., 1978, 1977), family practice residents, medical students, and nurses expressed positive attitudes regarding the rehabilitation potential of older people. All three professional groups expressed more positive attitudes than a comparison group of aides and orderlies at a nursing home.

Difficulty in recruiting geriatric physicians is a problem not only in the United States, but also in Great Britain. While a sample of 123 junior medical staff (Gale & Livesly, 1974) at an English hospital expressed slightly favorable attitudes toward geriatric medicine, most would not consider a career in the specialty. In other words, while they felt that treating older people is important, they wanted other physicians to do it.

In her excellent review of attitudes toward the elderly, Green (1981) noted that asking subjects about a generalized concept such as "old people" may create an artificial situation in which the absence of information other than age may force subjects to rely on stereotypes. This criticism applies to much of the literature on the perceptions of physicians and medical students regarding the elderly. To avoid this problem, Green emphasized the need for presenting subjects with specific stimuli to which they can respond. As a step in this direction, two studies used clinical vignettes to assess the attitudes of physicians toward older patients.

Ford and Sbordone (1980) asked 179 psychiatrists about patients described in four clinical vignettes. The vignettes described two women, one with agoraphobia, the other with reactive depression; and two men, one with an alcohol abuse problem, and the other with hypomania. The vignettes were identical in the two forms of the questionnaire, except that one form described the patient as 65 years of age or older, and the other as younger than 65. For example, the age of the

depressed woman was given as 32 years in one form, and as 72 years in the other form. The psychiatrists rated the younger patients as significantly closer to their conception of an ideal patient than the older patients. They gave the younger alcoholic man and depressed woman significantly better prognoses than the older patients with the same problems. For the agoraphobic and manic patients, no differences in prognosis as a function of age were found.

There are several possible explanations for the results of Ford & Sbordone (1980). One is that psychiatrists may have less confidence in their ability to successfully treat older patients because they have had less experience with this patient group than with younger adults. Older patients constitute only 4% of the patients seen at public outpatient mental health clinics and only 2% of those seen in private mental health clinics (Roybal, 1984). Other studies, to be discussed in more detail later, support the existence of a relationship between experience with elderly patients and attitudes toward them (Cyrus-Lutz & Gaitz, 1972; Warren, Painter, & Rudisill, 1983).

Another explanation for the results of Ford & Sbordone (1980) is that older psychiatric patients may actually be more difficult to treat than their younger counterparts. Gallagher and Thompson (1983) sought to determine whether 12 elderly patients with nonendogenous depression could be treated successfully with brief psychotherapy. All subjects showed significant improvement

after the therapy, and none relapsed during the 1-year follow-up period. Straker (1964) wondered how well a group of 100 elderly psychiatric outpatients, 75% of whom were diagnosed as depressed, would respond to psychiatric treatment. Elderly patients who were referred and treated within 6 months after the appearance of symptoms showed a response to psychiatric treatment that was "not markedly different" from the response expected of a young adult group. The longer the duration of symptoms prior to referral, the worse the outcome. While this study highlights the importance of early treatment for older people, Straker and others (Ginsburg & Goldstein, 1974; Kucharski, White, & Schratz, 1979) have noted a reluctance of physicians to refer older patients for psychiatric consultation.

A final explanation is that physicians may believe that older people are psychologically resistant to change. Physicians' expectations that older people will respond poorly to psychotherapy may, by delaying referral and treatment until recovery is unlikely, become a self-fulfilling prophecy.

In addition to promptness of treatment, the type of treatment seems to be an important determinant of how well older people respond. Interventions that have been developed for use with other populations may not be optimal for elderly psychiatric patients. For example, Gallagher and Thompson (1983) employed 90-minute rather than the typical 50-minute therapy sessions with their older patients, since pilot work indicated that elderly patients responded more slowly to

treatment than younger adults. Another study (Gallagher & Thompson, 1982) showed that older adults treated with cognitive or behavioral therapy fared better at the end of a 1-year follow-up than those treated with brief relational/insight therapy. Thus, while older people can respond favorably to psychiatric intervention, it may be necessary to tailor the intervention to their special needs.

The results of Ford and Sbordone (1980) suggest that characteristics in addition to age, such as type of symptoms, may influence the responses of physicians toward older patients; this hypothesis was tested by Baker (1984), who asked 275 health care providers attending a geriatric conference about two older patients described in vignettes. One patient had symptoms related to the normal aging process, such as hardening of the arteries, hearing loss at high frequencies, and a slight limp; the other had symptoms associated with disease processes, including high blood pressure, extreme near-sightedness, and varicose veins. The two vignettes were matched on age, sex, and number of symptoms. Sixty percent of the subjects indicated a preference for working with the diseased patient. The sample consisted primarily of physicians, nurses, and social workers.

When the responses of these three professional groups were compared, no significant differences were found. Apparently, even physicians who have an interest in geriatrics dislike treating patients whose problems are due to normal aging. One explanation for these results is that the chronic

medical conditions that emerge as part of the normal aging process may be particularly recalcitrant to current modes of medical practice; even if the symptoms associated with chronic medical conditions can be ameliorated, the underlying physiological process remains (Glazier, 1973).

Medical Student Attitudes Toward Older Patients

Research suggests that medical students have somewhat mixed attitudes toward elderly patients and geriatric medicine. Green and associates (Green, Keith, & Pawlson, 1983) measured the attitudes of 148 third-year medical students using Likert-scale items adapted from previous investigations or developed by the investigators. The students indicated that caring for the elderly can be rewarding and expressed a slight feeling of comfort with elderly patients. While they had slightly positive stereotypes regarding elderly patients, they found working with them somewhat frustrating. They had neither a strong intention to work with, nor a strong desire to avoid, elderly patients.

Another study (Perrotta et al., 1981) found both positive and negative attitudes toward elderly patients. Ninety-four percent of the medical students tested disagreed with the statement that geriatric patients are uninteresting, and 95% disagreed with the statement that they provide little satisfaction in treating. However, approximately one in three students agreed that older patients require too much attention and cannot be treated successfully. Half of the students

agreed that it is "difficult to see results with" geriatric patients. Eight percent of the students expressed an interest in specializing in geriatric medicine, but only three percent were very interested in the specialty. Four percent expressed a preference for treating older rather than younger patients, 48% had no preference, and 48% preferred younger patients.

A number of studies show that, like physicians, medical students are disinclined to work with elderly patients. Gale and Livesly (1974) reported that although their sample of 155 clinical medical students in England expressed somewhat favorable attitudes toward geriatric medicine, most would not consider a career in the specialty. Geiger (1978) discovered that reluctance to work with the elderly is not limited to students of medicine. She assessed the attitudes of 83 graduate students in law, medicine, and social work. When asked which of four age groups they would prefer to work with professionally (0-17, 18-35, 36-64, or 65 and over), not one student indicated a preference for working with the aged.

In another study (Spence et al., 1968), first-year and senior medical students ranked a list of medical wards in order of their preference to work on them. Both classes answered identically, with their choices listed as follows: (1) surgery, (2) pediatrics, (3) obstetrics, (4) psychiatry, (5) eye clinic, and (6) chronically ill old people. Because these wards differed not only in the age of patient, but also in the type of disease most likely to be encountered, the

results are not necessarily due to a bias against older people.

To summarize, it appears that while medical students have some positive and some negative attitudes toward older people, they prefer to work with younger patients. This suggests that the important issue is not how medical students feel about older patients per se, but how they feel about older people relative to other patient groups. This is consistent with Lutsky's (1980) evaluation of the literature assessing the attitudes of the general public toward older people.

Studies Examining Both Types of Attitudes

Only a few studies have assessed general attitudes toward older people as well as attitudes toward geriatric patients and geriatric medicine. These studies are important sources of information about potential relationships among various types of attitudes.

Interrelationships Among Physician Attitudes

One study (Holtzman et al., 1978, 1977) reported a low correlation between the general attitudes of nonphysician health care workers, including medical students, and their attitudes toward the rehabilitation potential of older people, suggesting that the two scales measured different sets of attitudes. However, for family practice residents, a correlation of .76 between general attitudes and attitudes toward the rehabilitation potential of older people was found. Perhaps for physicians, whose work is more directed toward

curing disease than that of other health care workers, rehabilitation potential is a potent determinant of attitudes toward the elderly. This hypothesis is supported by another study (Ford & Sbordone, 1980), which reported a significant positive correlation between patient prognosis and psychiatrists' ratings of the idealness of patients for their practice. Both of these studies suggest that favorable general attitudes toward the elderly and toward working with the elderly are linked to expectations of successful treatment outcome.

In contrast, another study (Baker, 1984) found that health care providers preferred to treat an elderly patient with symptoms of disease rather than a similarly aged patient with symptoms associated with normal aging, in spite of their belief that the diseased patient was in poorer condition and had a poorer prognosis. These results are not necessarily inconsistent with the previous research. Since physicians are oriented toward treatment of disease and receive less preparation for the treatment of age-related changes, they prefer treating diseased over nondiseased patients. Among patients who are diseased, they apparently prefer to help those they are most likely to be able to treat successfully.

Interrelationships Among Medical Student Attitudes

Perrotta and colleagues (Perrotta et al., 1981) found that medical students who expressed positive attitudes on the Kogan Attitudes Toward Old People scale also responded positively to items assessing attitudes toward the

characteristics of older patients. However, research on medical students (Holtzman et al., 1978, 1977; Perrotta et al., 1981), in contrast to that on physicians, suggests no significant relationship between general attitudes toward older people and expectations of successfully treating elderly patients. Presumably, with experience practicing medicine comes the ability to distinguish between those patients likely to be treatment successes and those likely to be failures, and a preference develops for those patients for whom treatment is likely to succeed. Furthermore, general attitudes of medical students toward older people apparently are unrelated to desire to work with elderly patients (Perrotta et al., 1981). These results suggest that attitudes toward older patients are not the sole determinant of willingness to treat them; other factors such as the perceived lack of prestige in geriatrics merit exploration in future research. Furthermore, little is known about how attitudes toward older patients might influence medical decision-making and patient-physician interactions. Diverse attitude measures should be used within a given study (Green, 1981; McTavish, 1971); their interrelationships may provide useful information about the structure and, possibly, origin of these attitudes.

Determinants and Correlates of Attitudes toward the Aged

Collectively, the studies described above suggest that while many physicians have somewhat positive attitudes toward older patients, they prefer younger patients. They would rather treat older patients with disease symptoms than

those with symptoms of normal aging. Their reluctance to see older patients may be due to feeling incompetent to treat them; medical educators may need to present medical students with more information regarding the physical changes believed to be associated with normal aging. Insufficient exposure during medical school to material specifically addressing the needs of older patients may account for the lack of interest in geriatric medicine among physicians.

A potentially important line of research seeks to determine whether any particular subject characteristics are associated with especially positive or negative attitudes toward older patients. This research has examined medical student and physician age, sex, specialty area, experience with the elderly, and knowledge or beliefs about older people.

Age

Unfortunately, few studies have even reported the demographic characteristics of the subjects. Surprisingly, a number of studies of both physicians' and medical students' attitudes toward the elderly (Cicchetti, Fletcher, Lerner, & Coleman, 1973; Ford & Sbordone, 1980; Gale & Livesly, 1974; Holtzman et al., 1978, 1977; Perrotta et al., 1981; Ray, Raciti, & Ford, 1985; Wilson & Hafferty, 1983) failed to report information concerning their subjects' ages.

Several studies, however, have investigated whether attitudes toward the elderly vary as a function of physician age. Ford and Sbordone (1980) reported a significant negative correlation between psychiatrists' age and their ratings of

idealness of patients for their practices for two out of four old patients described in clinical vignettes. Nonetheless, this finding does not support the notion that older psychiatrists prefer younger rather than older patients for their practices, since psychiatrist age and ratings of idealness were negatively correlated for two out of four younger patients as well. Furthermore, psychiatrist age and patient prognosis were negatively correlated for one younger and two older patients. Using the same data, another study (Ray et al., 1985) found that the older the psychoanalyst, the poorer the prognosis given to both manic and depressed older patients; however, the possibility of a relationship between age of psychoanalyst and prognosis for younger patients was not addressed. These results indicate that psychiatrists may become increasingly cynical about their ability to treat patients as they gain experience (Ford & Sbordone, 1980).

According to Cyrus-Lutz & Gaitz (1972), the responses of younger psychiatrists to a sentence completion measure indicated a lack of concern about growing old, while older psychiatrists mentioned goals they wanted to achieve before retirement. The responses of the younger psychiatrists suggested that they interacted with older people in a less passive and more outgoing manner than the older psychiatrists. Unfortunately, the authors do not indicate the age range of their sample nor of the two age groups. Furthermore, they did not present any statistics in regard to these age differences.

Studies examining medical students have found no correlation of subject age with attitudes toward the elderly (Holtzman, Toewe, & Beck, 1979; Holtzman, et al., 1981), but the lack of variability in subject age impedes the assessment of these relationships. Research investigating the relationship between physician age and attitudes toward older patients fails to distinguish between age effects and cohort effects. Older and younger physicians are likely to differ in their experiences with older psychiatric patients and in their training regarding older patients. Studies using a cross-sequential design (Nesselroade & Labouvie, 1985) are needed.

Sex

A recent reanalysis (Ray et al., 1985) of data previously reported by Ford and Sbordone (1980) revealed that although male and female psychiatrists did not differ in their ratings of the idealness of older patients for their practices, female psychiatrists gave older patients significantly poorer prognoses than did their male colleagues. The authors did not indicate whether sex differences in the prognoses given to younger patients existed as well, so it is impossible to exclude the possibility that female psychiatrists give poorer prognoses to young and old patients alike.

Solomon and Vickers (1979) administered the Tuckman-Lorge Old People Questionnaire (Tuckman & Lorge, 1953) to medical students and housestaff, and to a control group of

members of a mobile psychogeriatric team. This scale consists of 137 statements reflecting stereotyped views of old people, with which respondents indicate their agreement or disagreement. The higher the score, the greater the adherence to traditional stereotypes regarding older people. The questionnaire includes 13 subscales, although the validity of these has not been established (Kilty & Feld, 1976). On the Assessment of Life and Sex subscales, males expressed significantly more stereotypical views than did females. Female housestaff endorsed significantly more stereotypical views than did male housestaff on the Attitude toward Future and Insecurity subscales. Female housestaff had significantly higher total scores than their male counterparts, suggesting that the females had more stereotypical views of older people than did the males.

Other studies examining the relationship between sex of medical student and attitudes toward the elderly have either found no differences between males and females (Wilson & Hafferty, 1980), more positive attitudes among females compared to males (Holtzman et al., 1981), or more positive attitudes among males than females (Warren et al., 1983). The lack of consistency in results may be due to the failure of investigators to use standard measures with sound psychometric properties. No two of these studies used the same attitude measure; furthermore, some of these studies used instruments of questionable reliability and validity (Ray et al., 1981; Warren et al., 1983; Wilson & Hafferty, 1980). In addition,

the various measures may assess different attitudinal domains; as discussed earlier, attitudes toward the elderly may not be unidimensional.

Specialty Area

One study (Ahmed, Kraft, & Porter, 1986) compared the attitudes of physicians in different specialties toward geriatric patients. Specifically, 172 psychiatrists, 157 surgeons, and 108 internists responded to eight attitudinal items. Psychiatrists expressed the most positive attitudes, surgeons the least positive, and internists were intermediate in their attitudes.

Primary-care physicians provide the majority of care for the elderly; however, only a few studies have examined their attitudes toward older people. These studies (Holtzman et al., 1978; Holtzman et al., 1977; Maxwell & Sullivan, 1980) focused on family practice physicians who, next to general practitioners and internists, provide the bulk of medical care for the elderly. These studies show that family practice residents have fairly positive attitudes toward the elderly.

The notion that individuals who choose to practice primary care have more favorable opinions of older people than those who choose other specialty areas is supported by medical student studies. Warren, Painter, and Rudisill (1983) reported that third-year medical students who planned to specialize in Family Practice expressed significantly more positive attitudes toward the elderly than students who preferred other medical specialties.

In two other studies (Green et al., 1983; Holtzman et al., 1979), students indicating that they were likely to choose primary care areas for their practice had significantly more positive attitudes toward the elderly than those expressing a preference for other specialty care areas. Green and colleagues (Green et al., 1983) found that students preferring primary care areas perceived greater rewards in working with elderly patients, were more comfortable working with the elderly, and held more positive stereotypes about older patients than students choosing other specialty areas. Despite these differences, the groups did not differ in their reported intentions to work with elderly patients. These results suggest that primary care areas may attract individuals with more positive attitudes toward the elderly than other specialties or that training for primary care practice may enhance attitudes toward the elderly. Glazier (1973) noted that it is primary care physicians who traditionally have helped patients adjust to disability caused by chronic degenerative disease, although the trend toward increasing medical specialization has decreased their numbers. This underscores the importance of the identification of personality and other factors that may differentiate primary-care from other physicians and that may predict positive attitudes.

One possible explanation for the more positive attitudes of medical students and physicians who prefer primary care areas is that these practitioners may have a

more psychosocial orientation to patient care than other medical practitioners. Since psychiatrists are probably more psychosocially oriented than most physicians and surgeons are probably less psychosocially oriented, this might explain differences in their attitudes toward older people. Intention to work with elderly patients seems independent of attitudes toward older patients and is likely to be a function of other factors, such as the perception of geriatric medicine as a low-status specialty or a lack of exposure to geriatric medicine.

Experience with the Elderly

Several studies have investigated the possibility that experience with elderly persons may influence attitudes toward the aged. Perrotta and colleagues (Perrotta et al., 1981) hypothesized that medical students who had more personal contact with the aged would express more positive attitudes toward older people. Instead, they found that amount of contact with and feelings about grandparents, and the existence of other elderly persons the students considered important in their lives, failed to predict scores on the Kogan Attitudes Toward Old People scale. Contact with the aged was also uncorrelated with attitudes toward geriatric medicine and geriatric patients.

Other research (Warren et al., 1983) suggests that professional experience with the elderly influences attitudes toward geriatric patients. Third-year medical students with prior experience in geriatric medicine expressed significantly

more positive attitudes toward the elderly than students without prior geriatric experience. The quality rather than quantity of that experience may be most important, as shown by other investigators (Green et al., 1983). They found that while amount of contact with elderly persons was unrelated to intentions of third-year medical students to work with the elderly, the degree of positive feelings about previous personal and professional contact with the aged was positively related to intentions.

Supporting a link between experience with elderly patients and attitudes is the work of Cyrus-Lutz and Gaitz (1972), who reported, based on responses to a sentence completion instrument, that psychiatrists who had patients over age 65 in their private practice reported more positive feelings toward, and greater comfort with, older people than psychiatrists who do not treat elderly patients. Of course, these studies do not indicate whether experience influences attitudes, or if attitudes influence amount of, and feelings about, contact with elderly persons.

Knowledge or Beliefs about the Aged

Two studies (Holtzman et al., 1981; Perrotta et al., 1981) reported a positive correlation between factual knowledge about the elderly and attitudes toward this age group. With knowledge as well as with experience, cause and effect relationships are difficult to determine. However, these studies suggest that attitude change might result from attempts to increase knowledge of, and experience with, older

patients. Medical educators and gerontologists increasingly have been emphasizing the need to provide more geriatric training to medical students and physicians (Kane et al., 1980). Along these lines, a number of medical schools have modified their curricula to provide students with an exposure to geriatric medicine. This has provided an opportunity for researchers to evaluate the effectiveness of geriatric education in promoting attitude change among medical students.

Intervention Studies: Implications for the Relationship Between Beliefs and Attitudes

Intervention studies have focused on whether the attitudes and beliefs of medical students toward the elderly can be improved through geriatric education. The interventions reported in the literature have included the presentation of classroom material about aging and older people, the incorporation of a geriatrics component into a required primary care clerkship, and the combination of classroom material and exposure to older people. While some studies (Cicchetti et al., 1973; Green, Keith, & Pawlson, 1983) have found little or no improvement in attitudes following a geriatric intervention, other studies (Holtzman et al., 1978; Warren et al., 1983; Wilson & Glamser, 1982; Wilson & Hafferty, 1980, 1983) have reported more success. One study found that geriatric education increased the accuracy of medical student beliefs about aging and the elderly (Wilson & Glamser, 1982), while other studies (Warren et al., 1983; Wilson & Glamser, 1982; Wilson & Hafferty, 1980,

1983) reported that it increased the favorability of attitudes toward the elderly.

Differences in the effectiveness of geriatric educational experiences in modifying attitudes may be due to the types of interventions employed. For example, the exposure of medical students to healthy, community-dwelling older people may be more likely to favorably affect attitudes than exposure to nursing home patients (Green, Keith, & Pawlson, 1983; Holtzman et al., 1978). This suggests that experience with older people may be a determinant of medical student attitudes toward them. Health care practitioners are likely to see a preponderance of older people who are sick and dependent rather than healthy and independent. Thus, the composition of their patient population may reinforce pre-existing stereotypes. The problem may be compounded when physician experience is communicated to medical students through the educational process. To counter this problem, it is important that medical students be exposed to a broad range of older people, including healthy, active older people, during their medical training.

While an extensive review of studies evaluating the effectiveness of geriatric education in changing medical student perceptions of older people is beyond the scope of this literature review, two studies (Wilson & Hafferty, 1980, 1983) merit closer examination. These studies are noteworthy for the ways in which attitudes were measured.

1-22317 In the first study (Wilson & Hafferty, 1980), the attitudes of 15 medical students who took an elective seminar on aging and health were compared to a control group of 28 students who did not take the seminar. The seminar included the presentation of factual information, discussions with health professionals, and interviews with community-dwelling older people. Attitudes were measured before the seminar and one year later using Likert-type opinion items, sentence completion items, and estimates of the percentage of elderly individuals whose activities are seriously restricted by chronic illness. The Likert-type scale yielded an overall measure of the extent to which attitudes toward the elderly were positive or negative. On the sentence completion items, students were asked to give three responses to each sentence stem. Responses were rated by 11 raters as to the extent to which they attributed positive, neutral, or negative characteristics to the elderly. A measure of the complexity of attitudes toward the elderly was derived from the sentence completion responses by noting the number of words used in completing the sentences. A measure of heterogeneity was derived by determining whether the three responses to each sentence stem agreed in being either positive, negative, or neutral. Surprisingly, students who took the elective seminar initially expressed more negative attitudes than controls on the sentence completion measure. After the seminar, students who had been enrolled in it expressed significantly more positive attitudes than the control group on all five

measures. Control group attitudes did not change from the first testing to the second. The attitudes of the seminar students not only became more favorable, they became more complex and heterogeneous, and thus, probably more realistic.

Rather than assuming that the goal of geriatric training should be to make attitudes toward the elderly more positive, as many studies do, these authors (Wilson & Hafferty, 1980) recognize that the goal should be to increase the accuracy of perceptions of the elderly. Measuring the complexity and heterogeneity of attitudes is an important step in this direction. Stereotypes of either a positive or a negative nature may hinder the ability of physicians to perceive and respond to the individual needs of each patient.

A follow-up of the same students three and one half years after the seminar (Wilson & Hafferty, 1983) showed that the initial attitude changes were maintained on three of the measures (percentage ill, sentence completion, and heterogeneity). The attitudes of seminar students gained in complexity even after completion of the seminar, perhaps as a result of exposure to older patients during their clinical years. Overall attitudes of seminar students, as measured by the Likert-type scale, remained significantly more positive in the fourth year than they were prior to the seminar but had declined from the levels attained one year after the seminar. Control group students became more heterogeneous in their attitudes after their clinical experience than they had been the second year in medical school, but did not change on any

of the other measures. This study demonstrates that geriatric education can produce lasting attitude change.

The studies examining the impact of geriatric education on medical student attitudes toward older people lend support to the notion that attitudes can be changed by modifying beliefs. Experience with a broad range of elderly people may improve attitudes by exposing medical practitioners to older people who do not fit the typical stereotype of the older patient.

Behavioral Intentions Regarding Older Patients

While attitudes toward the elderly are interesting in their own right, their importance increases to the extent that they influence behavior. If physicians have negative attitudes toward elderly patients, their attitudes may influence their behavior toward older patients in ways that could affect the quality of care provided to these patients. Many physicians believe that the quality of medical care provided the elderly is inadequate. In a survey of a random sample of physicians (Miller, Lowenstein, & Winston, 1976), 69% of the respondents indicated that they believed that the quality of medical care available to older patients is inferior to that provided to younger patients. The inadequacy of care provided to nursing home patients, in particular, is suggested by the reluctance of most physicians to make nursing home visits (Mitchell & Hewes, 1986).

Several studies have assessed the self-reported behavior or behavioral intentions of physicians and medical

students. In one of the few studies that examined a broad spectrum of primary-care physicians and specialists (Miller et al., 1976), 151 randomly selected non-pediatric physicians in private practice completed a questionnaire assessing attitudes toward old people who were ill or in nursing homes. Unfortunately, the authors do not describe the questionnaire, its development, nor its reliability and validity. For purposes of this study, "old" was defined as over 75 years of age. About 87 percent of the physicians expressed a willingness to accept new older patients; this finding is difficult to interpret without knowing what proportion would agree to accept new younger patients. Physicians were asked how they would respond if they had to choose between providing emergency treatment to a hospital patient aged 25 versus one aged 75. While 40% of the physicians refused to respond to this question, 45% indicated that they would treat the younger patient first, and 14% reported that they would treat the 75-year-old first. Although no statistical analyses were reported, these data suggest that the attitudes of some physicians toward older patients may influence medical decision-making in critical situations. The high rate of refusal to answer the question about emergency treatment is noteworthy and suggests that physicians are reluctant to base triage decisions solely on the basis of patient age. In real emergency situations, physicians have more information about the patient than just the patient's age; asking them to make

medical decisions based solely on patient age creates a highly artificial situation.

The finding that older patients may be a last priority for treatment in life-and-death situations is substantiated by another study (Spence et al., 1968), in which medical students were asked how they would respond in a series of hypothetical medical situations. Specifically, they were asked which of two patients they would choose to save, if they could choose only one patient, and if in saving one, the other would die. When asked to choose between young and old patients, 95% of the first-year students and 98% of the seniors chose to save the young patient over the old, with only 4% of the first-year students and 2% of the seniors refusing to make a choice. When asked to choose between a female and a male patient, the percentage of students refusing to make a choice increased to 22% for the first-year students and 28% for the seniors, with nearly twice as many first-year students choosing the female patient over the male. The seniors were evenly divided between the male and female patients. When asked to choose between a black and a white patient, approximately half of both classes refused to choose; of those remaining, 35% chose white over black, while 15% of the first-year students and 19% of the seniors chose to save the black patient. When asked to choose between saving a young black or an old white patient, approximately 90% of both groups chose the young black patient, and only about 5% refused to choose. The high rate of refusal to answer the

questions pertaining to patient sex and race suggest that the medical students felt that these factors did not constitute sufficient information on which to base a decision. However, the relatively low rate of refusal to answer the questions pertaining to a choice between young and old patients suggests that the students felt that this was a more sound basis on which to make medical decisions. This is consistent with the authors' conclusions that biases against the elderly are stronger than those based on race and gender. This may reflect an attitude among medical practitioners that health care resources are best spent on individuals who can contribute the most to society; an individual whose remaining life expectancy is short may be viewed as less valuable to society than an individual whose life expectancy is longer. However, like the previous study (Miller et al., 1976) on physicians, this study forces subjects to rely on stereotypes by creating a very unrealistic situation in which age is the only information available about the patient.

Spence and colleagues (Spence et al., 1968) also asked their medical student subjects to imagine themselves to be a hospital chief of staff, and to assign given types of physicians as appropriate first to a general medical ward and then, using the same types of physicians, to a ward for chronically ill old people. When assigning physicians to a general medical ward, the brilliant therapist was deemed most appropriate, with the following types successively less desirable: good natured, even with disagreeable patients;

not too clever, but kind and gentle; easily upset by death of patients; and impatient and easily frustrated. In contrast, when assigning physicians to the geriatric ward, the physician who was good natured, even with disagreeable patients, was deemed most desirable. The not too clever but kind and gentle physician was next in desirability, with the brilliant physician the third choice. The value placed on being good natured even with disagreeable patients suggests that the students felt that irascible patients would be more prevalent on a geriatric ward. While the students apparently believed that intellectual ability was an important quality for a physician who works with general medical patients, they felt that it was less important for a physician who works with chronically ill old patients. They may have felt that the more intellectually talented physicians should work with patients whom they are more likely to be able to help--that is, the acutely ill. Another way of looking at these results is that medical students may believe that older patients have greater psychosocial needs than other patients and therefore would benefit more from a physician with greater psychosocial skills. This may reflect a perception that psychosomatic ailments are especially common among older people, despite evidence that older people do not report a disproportionate number of symptoms (Costa & McCrae, 1980; Denney, Kole, & Matarazzo, 1965). Or it may reflect a realistic perception that modern medicine is better suited to the treatment of acute rather than chronic conditions (Glazier, 1973), and

that therefore psychosocial support is more important for chronically ill older patients since less can be done for them medically than for acutely ill younger adults. This study is commendable for its use of diverse measures in which subjects were asked how they would respond in specific situations. A limitation of this study is that patients in the two types of wards would differ not only in age, but also in the types of disease encountered, so the results do not necessarily indicate negative attitudes against the elderly.

Ford and Sbordone (1980) performed a study described earlier in which psychiatrists were asked how they would treat patients of various ages described in clinical vignettes. The treatment choices were (1) psychotherapy alone, (2) psychotherapy and pharmacotherapy, (3) primarily pharmacotherapy, and (4) no treatment. No significant differences emerged as a function of the patient's age for the diagnoses of agoraphobia, mania, or alcohol abuse. However, psychiatrists were significantly less likely to recommend psychotherapy alone for the 72-year-old depressed woman than for the 32-year-old woman with the same symptoms, and much more likely to recommend pharmacotherapy alone for the older woman compared to the younger woman. Consequently, it appears not only that older people may be assigned lower priority for treatment than younger people, they may be treated differently for the same disease. This may reflect a belief among psychiatrists that older people do not benefit from psychotherapy, despite evidence to the contrary

(Gallagher & Thompson, 1983; Straker, 1964). The tendency to prescribe antidepressive drugs for the elderly must be tempered by a realization of the frequency of these drugs causing undesirable side effects in this patient group (Blazer, 1986). Since differences as a function of age were not found for male patients, future research should examine the effects of both age and sex to determine whether older women are at special disadvantage, as suggested by Steuer (1982).

The notion that older patients with psychological problems are treated differently than younger patients with similar problems receives support from another study (Kucharski, White, & Schratz, 1979). In this study, 60 physicians responded to vignettes describing patients with psychiatric symptomatology. There were two forms of the questionnaire, each containing eight vignettes. In one form, four of the patients were described as young (ages 25, 28, 31, 34, and 37) and four were described as old (ages 62, 65, 68, 71, and 74), whereas in the other form, the ages of the patients were reversed. Each vignette included the statement that no organic basis for the symptoms could be found. The physician was asked to recommend a treatment for each patient. Despite identical symptomatology, physicians recommended referral for psychological assistance significantly less frequently for old compared to young patients. The more severe the symptoms, the greater the difference in referral rates for young and old patients.

When responses to each vignette were analyzed separately, differences in referral rates for young and old patients were significant for only two vignettes. The symptoms described in these two vignettes are similar to those associated with senility. Kucharski and colleagues suggest that a physician who sees an older person with symptoms such as confusion, disorientation, agitation, despondency, and periodic withdrawal may assume that the patient is senile and that psychological assistance would be useless.

The results of these studies support the notion that older people are viewed as relatively low priority for the receipt of medical resources; however, they pose a dilemma: Is this appropriate and ethical medical practice? Current medical practice emphasizes devoting medical resources to those who will gain the greatest benefit, in other words, those patients with the greatest life expectancy. While this approach usually favors younger patients, an old, healthy patient may have a greater life expectancy than a young, chronically ill patient.

Physician Behavior toward Older Patients

Very few studies have assessed physician behavior toward patients of different ages. Attempts to determine whether physicians spend more time with their older or younger patients have produced conflicting results. One study found that physicians spend more time per encounter with older than with younger patients (Reuben & Robertson, 1987), another found that they spend less time with older than with younger

patients (Keeler, Solomon, Beck, Mendenhall, & Kane, 1982), and a third study (Greene, Adelman, Charon, & Hoffman, 1986) found that physicians spend the same amount of time with younger and older patients. Since older physicians have been reported to spend more time per visit with their patients than younger patients (Reuben & Robertson, 1987), differences in physician age may account for some of these discrepancies; however, two of the studies (Greene et al., 1986; Keeler et al., 1982) did not report the ages of their physicians.

Greene and colleagues (Greene et al., 1986) audiotaped five physicians interviewing eight patients each. Half of the patients interviewed by each physician were age 45 or younger, and half were age 65 or over. Physicians were judged to have been more egalitarian, patient, engaged, and respectful toward their younger patients than toward their older patients. They raised more medical and fewer psychosocial issues with older patients; however, this appeared to be related to differences in illness severity. The physicians were less likely to answer the questions and address the concerns of older compared to younger patients. While attempts were made to ensure that the judges were blind to patient age, "verbal cues" and specific references to patient age by either the physician or the patient interfered with these efforts. The authors inferred that ageist attitudes were responsible for the differences in physician behavior toward young and old patients; while they noted that the physicians made some derogatory remarks about old people, they did not directly

assess attitudes. Research assessing the relationship between attitudes and behavior is greatly needed.

Summary and Conclusions

Research demonstrates that both physicians and medical students prefer to treat younger rather than older patients. Primary-care physicians express more positive attitudes toward older patients than their colleagues in other specialty areas. Studies examining the behavioral intentions of physicians and medical students suggest that older people may receive poorer medical care than younger patients. Few studies on the actual behavior of physicians toward older patients have been conducted, although one such study (Greene, et al., 1986) suggests that physicians may not listen as well to older patients.

This body of research suffers from the lack of a theoretical framework and from several methodological limitations. To test whether ageism exists, researchers should measure the perceptions subjects have of people in various age groups. Many researchers only ask about attitudes toward older people. Since asking questions about people of various age groups may highlight the hypothesis being tested, studies conducted in this manner should use either a between-subjects or an age-embedded design. In the latter design, the stimulus person's age is embedded in a context with other attributes and behaviors, thus minimizing demand characteristics (Lutsky, 1980). Merely asking subjects to indicate their attitudes toward older people may not produce

responses that accurately indicate their attitudes in specific situations with older people (Green, 1981). Subjects may not accurately perceive their own attitudes. Furthermore, when asked to respond to a specific older person such as a grandparent, subjects usually express more positive attitudes than when responding to the generalized concept of an old person. These findings demonstrate the need for asking subjects to respond to specific rather than general stimuli.

In studying physicians and medical students, the use of clinical vignettes seems particularly promising in that it allows variation of factors other than age, such as sex and health status, that might interact with age. Older people differ from younger adults in a number of respects in addition to age -- for example, they may differ in educational level and manner of relating to physicians. Older patients are more likely to be seriously ill. Attitudes may be jointly determined by age and other characteristics. For example, sex and age may interact to determine attitudes, as suggested by several authors (Ginsburg & Goldstein, 1974; Steuer, 1982). Factors other than age may be more potent determinants of attitudes than age itself; for example, an elderly person in excellent health may be viewed more positively by physicians than a young person who is equally healthy. A final advantage of the use of clinical vignettes is that it allows exploration of the possibility of differential clinical assessment and treatment of patients as a function of age.

Chapter 2

Specific Aims and Hypotheses

This dissertation study was designed to address several gaps in the literature. First, it was based on a theoretical framework (Fishbein & Azjen, 1975) that clearly defines attitudes and suggests how they should be measured. Second, it compared the attitudes of medical students toward old and young patients rather than merely assessing medical student attitudes toward older patients. Third, rather than relying solely on subjects' self-reports of attitudes, which assume that subjects accurately perceive and report their own attitudes, subjects' attitudes were measured without their knowing that they were part of a study of attitudes toward older people. This was made possible by the use of a design in which patient age was a between-subjects factor. Fourth, subjects responded to a specific stimulus rather than a generalized concept of "old person" or "young person." Generalized concepts may force people to rely on stereotypes and thus may not accurately predict how subjects will respond in specific situations with specific patients. The specific stimulus used was an audiotape of a patient describing his or her symptoms. Fifth, the salience of age as a focus of the study was minimized by an age-embedded design, in which age was only one of several pieces of information provided about the patient. Sixth, this study assessed the relationship between medical student attitudes and actual behavior; specifically, it examined the possibility that negative

attitudes toward older patients result in less attentive listening to their complaints. Seventh, this study examined the influence of other factors that may interact with age to influence medical student and physician reactions to patients, that is, patient sex and the presence or absence of affective symptoms of depression.

Depression is believed to be the most common mental disorder among adults in general, and among the elderly in particular. Studies of the prevalence of depression in the community have produced widely varying estimates. A 1983 study of community-dwelling adults over age 65 (Murrell, Himmelfarb, & Wright, 1983) reported that 14% of the males and 18% of the females had scores on the Center for Epidemiologic Studies Depression Scale indicative of depression. However, evidence suggests that depression in the elderly is under-diagnosed. While depressive symptoms are highest in the over-65 age group, the prevalence of diagnosed depressive disorders is highest among people age 25 to 65 years (Gurland, 1976).

Research indicates that medical students perceive older people to be more emotionally ill than younger people (Spence et al., 1968), yet physicians are less likely to refer older patients than younger patients for psychological assistance (Ginsburg & Goldstein, 1974; Kucharski, White, & Schratz, 1979). This may be due to an expectation of poorer outcomes for older patients with some types of mental illness, such as depression (Ford & Sbordone, 1980). Depression may be particularly difficult to diagnose and treat in the elderly

due to the multiplicity of causes of depression in the elderly (for example, drug side-effects, malnutrition). The poorer prognoses given to older patients may not be realistic, however, since research suggests that psychological intervention with older people can be as successful as that with younger people provided the intervention occurs within six months after initiation of the symptoms and the type of intervention is appropriate for older people. The belief that older people do not respond well to psychotherapy may lead to an increased tendency for physicians to medicate older as opposed to younger depressed patients without providing nonpharmacologic psychiatric treatment.

Stereotypes about the elderly may influence clinical judgments in important ways. Beliefs that elderly people in general, and elderly women in particular, are hypochondriacal may cause medical personnel to take less seriously and attribute to psychological causes symptoms that are physiological in origin. This may be especially likely when such stereotypes are corroborated by signs that the person is experiencing psychological difficulty.

This dissertation research examined whether medical student attitudes and reactions to the symptoms of depressed and nondepressed patients vary as a function of patient age and sex. The following hypotheses were tested to explore the possibility that the attitudes of medical students towards older patients influence their clinical judgments regarding the diagnosis, prognosis, and treatment of depressed patients.

Hypotheses

1. Medical students would report a greater desire to work with younger than with older patients. This prediction follows from previous research (Geiger, 1978; Perrotta et al., 1981).

2. Medical students would rate older patients as more emotionally ill and would be more likely to diagnose older patients as suffering from mental illness than younger patients. This prediction was based on the results of Spence and colleagues (Spence et al., 1968).

3. Medical students would give less favorable prognoses to older than to younger patients. This prediction was based on the finding of Ford and Sbordone (1980) that psychiatrists gave younger patients significantly better prognoses than older patients with the same problems. This was true for male alcoholic patients and for female depressed patients, but not true for male hypomanic patients or female agoraphobic patients.

4. Medical students would be less likely to refer older patients than younger patients for psychological assistance despite identical depressive symptomatology. This prediction followed directly from previous research (Ginsberg & Goldstein, 1974; Kucharski, White, & Schratz, 1979).

5. Medical students would remember less of the personal information presented by older patients compared to that presented by younger patients. Research suggests that physicians are less patient, egalitarian, engaged and

respectful with their older compared to younger patients (Greene, Adelman, Charon, & Hoffman, 1986). Furthermore, Greene and colleagues found that physicians did not address the concerns or answer the questions of older patients as well as they responded to those of younger patients, suggesting that perhaps they did not listen as well to the older patients.

6. Medical students who plan to enter primary care areas of practice would express more positive attitudes toward older people than medical students who plan to enter other areas of practice; however, they would not necessarily behave more positively toward older people than medical students who plan to enter other specialty areas. The notion that medical students who plan to enter primary care specialties express more positive attitudes than their colleagues who plan to enter other specialty areas is supported by several studies (Warren, Painter, & Rudisill, 1983; Green, Keith, & Pawlson, 1983; Holtzman, Toewe, & Beck, 1979). The more positive attitudes of primary care physicians may not be translated into actual behavior; for example, one study found (Keeler, Solomon, Beck, Mendenhall, & Kane, 1982) that family practitioners and internists spent more time per hospital encounter with their younger patients than with their older patients, while three groups of subspecialists gave approximately the same amount of time to younger and older patients.

7. Medical students who adopt a more psychosocial view of patient care would express more positive attitudes toward older people than medical students who adopt a more biomedical and less psychosocial approach.

Chapter 3

Method

Overview

The study design was a 2x2x2 factorial with the following factors: patient age, patient sex, and presence or absence of depression in the patient. Each cell consisted of 11 subjects. All subjects were either third-year or fourth-year medical students.

To provide a reasonable rationale for the measures to be collected, prospective subjects were told that the purpose of the study was to compare the effectiveness of audiotapes, videotapes, and written vignettes for use in the clinical instruction of medical students. They were told that they would either listen to an audiotape, view a videotape, or read a written vignette of the same material and then complete questionnaire ratings on the material presented. Subjects were not informed of the true purpose of the study in order to minimize demand characteristics and the tendency to give socially desirable responses. Subjects were assured that their responses would remain confidential. All subjects listened to an audiotape in which a fictitious patient indirectly stated his or her age (either 32 or 67 years) and described his or her symptoms. All audiotapes consisted of the same material, except that patient age, patient gender, and the presence or absence of depressive symptoms were varied in a true factorial design.

Following the audiotape, subjects completed questionnaires assessing their beliefs, attitudes, behavioral intentions, and, indirectly, their actual behavior toward the patient portrayed in the audiotape. They provided basic personal and professional information about themselves. They also completed a questionnaire assessing their beliefs about psychosocial aspects of patient care. After completion of questionnaires, subjects were interviewed about the factors that influenced their decision-making concerning the patient. Finally, subjects were debriefed and thanked for their participation. Subjects who were not active-duty military were paid for their participation.

Subjects

The sample consisted of advanced medical students recruited from local medical schools and health care facilities. Because much previous research has focused on medical students, selection of this subject population facilitates comparison between the results of this study and those of previous studies. Third- and fourth-year students were selected for this study because they are more likely than other medical students to have had sufficient training concerning depression to respond knowledgeably to the vignettes. Third-year students who had not completed both a primary-care and a psychiatry rotation were dropped from the study.

Subjects were recruited through letters (See Appendix A), advertisements placed on medical school bulletin boards,

verbal announcements, and word-of-mouth. Subjects who were not active-duty military were paid \$10.00 for their participation.

The initial sample consisted of 93 medical students. The data of 5 third-year students were excluded from the analyses because they did not meet all of the criteria for participation in the study. The resulting sample of 88 subjects included 27 (30.7%) females and 61 (69.3%) males. Subjects ranged in age from 24 to 40 years, with a median of 26.5 years. A total of 23 subjects (26.1%) were in their third year of medical school, and 65 (73.9%) were in their fourth year. Students from the Uniformed Services University of the Health Sciences (USUHS), a military medical school, comprised 62.5 (n=55) of the sample; the remaining subjects were students at civilian medical schools.

Data on outpatient experience during medical school were available for 81 subjects; all of these subjects indicated that they had received outpatient experience as part of their medical school training. Furthermore, 53 (60.2%) subjects reported having had experience with outpatients prior to entering medical school.

Assignment of subjects to experimental conditions was accomplished through a modified random procedure to ensure that institutional affiliation and gender were approximately evenly distributed across conditions. Eleven subjects were assigned to each condition. The distribution of subjects by

gender and the median age for subjects in each condition are shown in Table 1.

Materials

Eight audiotapes were prepared in which a fictitious patient indirectly stated his or her age and described his or her symptoms and their duration. The symptom complexes described were suggestive of hypothyroidism and depression. The content of the audiotapes followed a written script (See Appendix B). In the audiotapes, patient age, sex, and the extent of depressive affect were varied in a true factorial design. Two audiotapes presented a 32-year-old male patient; two presented a 67-year-old female patient; two presented a 32-year-old female patient; and two presented a 67-year-old female patient. Within each group based on age and sex of the patient portrayed in the audiotape, half of the patients presented their symptoms in a matter-of-fact manner, while the other half presented their symptoms in a manner indicative of depressive affect. The patients complained of the following symptoms: indigestion, back pain, cold sensitivity, dry skin, nausea, fatigue, loss of appetite, and weakness. In addition, all patients reported recently moving into a smaller house because of financial difficulties, a psychosocial circumstance that might precipitate a depressive reaction. To further enhance the depression manipulation, depressed patients complained of waking up "an hour or so early" and of "at least 5 lbs." weight loss. In contrast, nondepressed patients reported sometimes waking up early, but attributed this to the

neighbor's new dog: "When they let it outside in the morning it barks a lot." Nondepressed patients also stated: "I don't think I've lost any weight; oh, maybe a pound or so, but it's hard to tell."

Procedure

Six family-practice physicians read the script without the information on patient age and sex. Three of the physicians read the script for the nondepressed patient, while the other three read the script for the depressed patient. They were asked to complete a questionnaire (See Appendix C) asking them to indicate the most likely diagnoses of the patient's medical condition and the most appropriate medical interventions for the patient. Their judgments were used as an indicator of quality medical care, against which quality of care issues for older compared to younger patients were evaluated.

The diagnoses given by the physicians were quite variable (See Appendix D); however, there was substantial agreement for two diagnoses. Depression was listed as a diagnosis by all six physicians; hypothyroidism was listed by all but one. Two physicians listed anxiety. Four listed a gastrointestinal diagnosis, although the exact diagnosis varied.

In terms of further evaluation and treatment, five out of six physicians said they would order laboratory tests. Four of these specifically mentioned a complete blood count

and five of these specifically indicated thyroid function tests.

Two professional actors were hired to portray the male patients; each portrayed the depressed and nondepressed patients in his general age range. Similarly two professional actresses were hired to portray the female patients, each in her general age range. The use of actors and actresses helped ensure the credibility of the patient portrayals and the uniformity of delivery style. The actors and actresses each were paid \$50 to read from a prepared script (See Appendix B). Each actor and actress was instructed to read each script in a similar manner, with the exception of portraying differences in speech styles associated with the presence or absence of depression. Specifically, the actors and actresses were instructed to portray the nondepressed patient as very matter-of-fact about his or her symptoms, friendly, and concerned but not overly distressed. In contrast, they were instructed to portray the depressed patient by speaking slowly, sighing frequently, and generally conveying the impression that even the small act of speaking required the exertion of great effort by the patient.

The experimenter informed subjects that the purpose of the study was to examine various factors that might influence clinical decision-making in medical students. They were told that they would either listen to an audiotape, view a videotape, or read a written transcript of the same material. In actuality, all subjects heard an audiotape only.

Subjects were told that they had been randomly assigned to the audiotape group and that they would first listen to the audiotape and then respond to some questionnaire items concerning the audiotape.

Subjects were instructed in the operation of the tape recorder, provided headphones, and informed that they could listen to the tape when ready. They were instructed that they could listen to the tape only once, and that they could not take notes while the tape was playing. The subject heard the patient portrayed on the audiotape provide the following information: the patient's name, age, symptoms, and duration of symptoms. After listening to the audiotape, subjects completed a series of questionnaire items assessing their attitudes, beliefs, and behavioral intentions toward the patient. They also completed a questionnaire assessing their recall of information presented by the patient, a questionnaire asking them to provide basic personal and professional information, and a questionnaire assessing their beliefs about the extent to which physicians should adopt a biopsychosocial approach to patient care. After completion of the final questionnaire, subjects participated in an unstructured interview concerning the factors that influenced their decision-making and the process by which they made their decisions concerning the patient; the interview was audiotaped.

Finally, subjects were thanked for their participation and debriefed. Subjects who were not active-duty military were paid.

Measures

Beliefs about the Patient.

Subjects' beliefs regarding the nature of the patient's condition and their evaluations of the patient's prognosis were assessed. The belief items (see Appendix E) located the person on a probability dimension linking the patient and some attribute. Included with the belief items were two "filler" items asking for subjects' personal preferences regarding mode of presentation of instructional material.

Attitudes toward the Patient.

Attitudes were assessed through a series of items, each asking the subject to place the patient somewhere along a bipolar evaluative dimension. The questionnaire items assessing attitudes (see Appendix E) focused on such issues as the extent to which the subject would enjoy treating the patient and how interesting the subject perceived the case to be. Also included were items assessing the extent to which technical and interpersonal skills would be necessary for treating the patient.

Behavioral Intentions toward the Patient.

Behavioral intentions were assessed through questionnaire items which asked subjects to place themselves on a probability dimension linking themselves and some action

in relation to the patient. These items (see Appendix E) were used to explore the ways in which attitudes may influence the medical treatment of patients.

Actual Behavior toward the Patient.

An indirect measure of listening behavior was obtained by assessing how much each subject remembered of the patient. Subjects were asked to recall the patient's name and age. In addition, they were asked to select from a symptom checklist (see Appendix E) those symptoms that the patient mentioned on the audiotape. The checklist included both physical and psychological symptoms. A score was computed by subtracting the number of symptoms incorrectly identified (the number incorrectly identified plus the number not identified that should have been) from the number of symptoms correctly identified. Higher scores are assumed to reflect more attentive listening to the patient's complaints than lower scores.

Subject Characteristics.

Subjects completed a questionnaire (see Appendix E) which asked for the following personal information: gender, age, future specialization plans, and year in medical school. The questionnaire also asked respondents to list rotations they had completed and any experience they had with outpatients either during or prior to medical school. It also asked subjects to indicate the amount of experience they had had with patients and nonpatients from several populations, such as the elderly and ethnic minorities. A final set of

items asked subjects to rate the prestigiousness of various medical specialty areas.

Beliefs about Psychosocial Aspects of Patient Care.

Subjects' beliefs regarding the extent to which physicians should adopt a biopsychosocial approach to medical care (as opposed to a purely biomedical approach) was assessed using the Physician Belief Scale (Ashworth, Williamson, & Montano, 1984). This scale consists of 32 statements to which the subject responds using a 5-point Likert-type scale. On this scale, a response of "1" indicates "disagree" and a response of "5" indicates "agree." Lower scores indicate a more psychosocial approach to patient care. The scale was modified slightly for use with medical students.

Analyses

Statistical analyses were performed using the SPSS-X statistical package. These analyses included examination of the effects of the following factors on medical students' beliefs, attitudes, behavioral intentions, and behavior toward the patients presented on the audiotape: patient age, patient sex, and the presence or absence of depressive symptoms in the patient. These factors consist of two levels and were examined between subjects using 3-way analyses of variance or chi-square tests as appropriate. Post hoc tests using the Duncan procedure were performed when needed. The relationships between beliefs, attitudes, intentions, and behavior were examined using multiple regression analyses. Except where otherwise noted, alpha levels were set at $p < .05$.

Chapter 4

Results

Effectiveness of Experimental Manipulations

The age manipulation. Subjects were asked to indicate the patient's age. Subjects assigned to a younger patient condition recalled ages ranging from 28 to 40 years, with a mean of 32.5. Subjects assigned to an older patient condition recalled ages ranging from 62 to 86, with a mean of 67.2. Since the ages given by the younger patients and the older patients were 32 and 67, respectively, this suggests that the age manipulation was effective. To determine whether perceived patient age varied as a function of the age manipulation, patient gender or depressive symptoms, a 2x2x2 ANOVA, with patient age, gender, and depressive status as the factors, and recalled patient age as the dependent measure, was performed. Results showed no significant differences in recalled patient age except as a function of the age manipulation, $F(1,70) = 3209.51, p < .001$.

The depression manipulation. The depression manipulation also was effective: All but one subject reported being influenced by the patient's speech characteristics. Furthermore, patients who were supposed to sound depressed were significantly more likely to receive a primary diagnosis of depression than patients who were supposed to sound matter-of-fact about their symptoms, $\chi^2(1, N = 88) = 18.18, p < .00005$. Further evidence that the manipulation worked comes

from an analysis in which all of the diagnoses generated by each subject were examined to determine if any of the diagnoses generated was that of depression. A depression diagnosis was more likely if the subject heard the tape of a patient who was supposed to sound depressed than if the subject heard the tape of a patient who was supposed to sound nondepressed, $\chi^2(1, N = 88) = 10.92, p < .001$.

Experimental Analyses

Measures of attitudes toward the patient. Some of the attitude ratings were significantly intercorrelated (see Table 2). Specifically, ratings of interest in the case were highly correlated with ratings of how enjoyable treating the patient would be ($r = 0.67, p < .001$, two-tailed); these ratings were combined into a single interest/enjoyment index. Similarly, ratings of the extent to which treating the patient would be difficult and challenging were highly correlated ($r = 0.72, p < .001$, two-tailed), and were combined into a difficult/challenging index. Ratings of the amount of personal skill and technical skill required to treat the patient were only modestly correlated with the other ratings and therefore were examined separately.

To test the hypothesis that older patients would be viewed less favorably than younger patients, a series of $2 \times 2 \times 2$ ANOVAs, with patient age, gender, and depressive status as independent variables, and the attitude measures as dependent variables, was performed. The analysis revealed no significant main effects of patient age (younger vs. older),

patient sex, or whether the patient sounded depressed on any of the attitude measures.

A marginally significant two-way interaction, $F(1,80) = 3.17$, $p=.08$, of patient age and patient sex emerged for the interest/enjoyment measure; this interaction is depicted in Figure 1. Contrary to predictions, older males were rated most interesting/enjoyable. Consistent with predictions, older females were rated least interesting/enjoyable. Post hoc comparisons using the Duncan procedure revealed that no two groups were significantly different at the $p<.05$ level. A marginally significant three-way interaction of patient age, gender, and depressive status emerged for the interest/enjoyment ratings, $F(1,80) = 3.05$, $p=.08$. Older depressed males were considered most interesting/enjoyable. As expected, older depressed females were rated least interesting/enjoyable. Post-hoc comparisons showed that older depressed females (mean = 64.34) were rated as significantly ($p<.05$) less interesting and enjoyable than older depressed males (mean = 82.16).

Measures of beliefs about the patient. To calculate a measure of beliefs that reflected belief content as well as belief strength, the value associated with each response to a belief content item was multiplied by the confidence the subject reported in the accuracy of that belief. Correlations between the belief measures are shown in Table 3. Belief that the patient's prognosis was good was highly correlated with the belief that the patient was physically well ($r=.59$,

$p < .001$, one-tailed) and moderately correlated with belief that the patient was emotionally well ($r = .36$, $p < .001$, one-tailed). Belief that the patient should be hospitalized was moderately correlated with the belief that the patient was physically ill ($r = .32$, $p < .01$, one-tailed). Belief that the patient's symptoms were serious was moderately correlated with the belief that the patient was seriously ill ($r = .42$, $p < .001$, one-tailed). Belief that the patient was a hypochondriac was significantly and negatively correlated only with the belief that the symptoms were serious ($r = -.21$, $p < .05$, one-tailed).

To determine whether patient age, gender, and symptoms of depression influenced subjects' beliefs concerning the patient's medical condition, a $2 \times 2 \times 2$ ANOVA was performed for each belief measure. Contrary to expectations, no significant main effect of patient age was found for any of the belief measures. A significant effect of patient gender was found for the belief that the patient was seriously ill, $F(1,80) = 4.72$, $p < .05$, with males perceived as more seriously ill despite having presented with identical symptoms. The extent to which the patient sounded depressed had a marginally significant effect on the belief that the patient was emotionally well, $F(1,80) = 3.70$, $p = .06$, such that depressed patients were seen as less emotionally well. Two other marginally significant effects of depressed affect were found for the belief measures: Depressed patients were viewed as more physically ill, $F(1,80) = 3.40$, $p = .07$, and more seriously ill, $F(1,80) = 3.08$, $p = .08$, than nondepressed patients. No

significant effects of the patient characteristics were found for the beliefs that the patient was a hypochondriac, that hospitalization was needed, that the symptoms were serious, or that the patient's prognosis was good.

Hypothyroidism was diagnosed in 58 cases, and depression was diagnosed in 75 cases. Contrary to expectations, chi-square analysis revealed no significant effects of patient gender or patient age on the likelihood that the subject generated diagnoses of depression or hypothyroidism.

Behavioral intentions items. Correlations between the interventions items are shown in Table 4. Likelihood of medication was significantly correlated with likelihood of inpatient procedure ($r=.22$, $p<.05$, two-tailed), outpatient procedure ($r=.24$, $p<.05$, two-tailed), and a psychiatric consult ($r=.28$, $p<.05$, two-tailed). Likelihood of an outpatient procedure was significantly correlated with likelihood of an inpatient procedure ($r=.28$, $p<.05$, two-tailed). Likelihood ratings of inpatient procedures were significantly correlated with likelihood of a psychiatric consult ($r=.24$, $p<.05$, two-tailed) and of a nonpsychiatric consult ($r=.48$, $p<.001$, two-tailed). Likelihood of a psychiatric consult was significantly correlated with likelihood of a nonpsychiatric consult ($r=.26$, $p<.05$, two-tailed).

To determine whether patient age, gender, and depressive symptoms influence behavioral intentions regarding

how to treat a patient, a series of 2x2x2 ANOVAs was performed, with the likelihood ratings for initiating various medical interventions as the dependent measures. A significant interaction of patient gender and depressive status, $F(1,79) = 5.03$, $p < .05$, was found for the likelihood of counseling and reassurance; this interaction is shown in Figure 2. Post hoc comparisons showed that the likelihood of counselling and reassurance was significantly greater ($p < .05$) for depressed females (mean = 94.33) than for depressed males (mean = 81.05).

A significant main effect of patient gender, $F(1,80) = 6.68$, $p < .05$, was found for the likelihood of ordering laboratory tests. Specifically, lab tests were rated as more likely for male (mean = 93.9) than for female patients (mean = 84.5). Another significant main effect of patient gender, $F(1,80) = 4.09$, $p < .05$, was found for likelihood of recommending medication, with medication more likely for female (mean = 54.1) than for male patients (mean = 41.1).

Not surprisingly, ratings of the likelihood of ordering a psychiatric or psychological consult were significantly higher for patients who sounded depressed $F(1,78) = 15.21$, $p < .001$. A significant two-way interaction of patient gender and depressive status, $F(1,78) = 4.08$, $p < .05$, was found for likelihood of initiating a consult with another physician, as illustrated in Figure 3. Post hoc comparisons revealed that subjects rated depressed males as significantly ($p < .05$) more likely to require a consult with

another physician (mean = 41.93) than either nondepressed males (mean = 21.84), depressed females (mean = 23.50), or nondepressed females (mean = 25.57).

A marginally significant interaction of patient age and depressive status, $F(1,78) = 2.86$, $p < .10$, also emerged for likelihood of initiating a consult with another physician. Post hoc comparisons revealed that the likelihood of recommending a consult with another physician was significantly ($p < .05$) greater for older depressed patients (mean = 41.07) than for older nondepressed patients (mean = 23.11), younger depressed patients (mean = 23.52), or younger nondepressed patients (mean = 24.30).

To further investigate the greater likelihood of recommending medication for the female than the male patients, a series of ANOVAs was performed. These analyses examined whether the decision to recommend a particular type of medication was influenced by the patient characteristics. Specific types of medication recommended by subjects included antidepressants, medications for back pain (e.g., muscle relaxants, analgesics), thyroid medication, gastrointestinal medication, medication to treat acquired immune deficiency syndrome, cardiovascular medication, iron, and vitamins and minerals. Of these, only medication to treat depression, back pain, thyroid disorders, and gastrointestinal problems were recommended with sufficient frequency to permit statistical analysis. The analysis revealed a marginally significant effect of patient age on likelihood of recommending

antidepressant medications, $\chi^2(1, N = 88) = 3.14, p=.08$, with such medications more likely for older than for younger patients. Not surprisingly, recommendation of antidepressants was more likely for depressed patients than for nondepressed patients, $\chi^2(1, N = 88), = 15.91, p<.0001$. A marginally significant effect of patient gender was found for back pain medication, $\chi^2(1, N = 88), = 3.67, p=.06$, which was recommended more frequently for females than for males.

Since the medical interventions most commonly recommended by the physicians surveyed were a complete blood count and tests of thyroid functioning, chi-square analyses were performed to evaluate the appropriateness of the medical interventions suggested by the medical students as a function of the patient characteristics. Tests of thyroid functioning were recommended by 67 (76.1%) of the medical students; no significant effects of patient age, gender, or symptoms of depression were found for the likelihood of recommending thyroid function tests. A complete blood count was recommended by 72 (81.8%) of the students. While patient age and depressive status did not significantly affect the likelihood of recommending a complete blood count, this type of laboratory test was significantly more likely for male than for female patients, $\chi^2(1, N = 88) = 4.89, p<.05$.

Behavior items. The behavior items assessed how well subjects listened to the patient by asking them to recall information presented by the patient. These items asked

subjects to recall the patient's age and name, and to indicate on a symptom checklist the symptoms mentioned by the patient.

A majority (62, or 70.5%) of the subjects correctly recalled the patient's age. Chi-square analysis revealed no significant effects of patient sex or depressive status on ability to recall the patient's age. However, a significant effect of patient age was found, $\chi^2(1, N = 88), = 5.46, p < .05$, with subjects' recall of patient age more accurate for the older patients than for the younger patients.

The patient's full name was correctly recalled by only 24 (27.3%) subjects. Twelve subjects (13.6%) recalled either the first or last name but not both, and fifty subjects (56.8%) recalled neither the first nor the last name. Two subjects gave a title (e.g., "Mrs.") followed by the patient's last name; these responses were excluded from further analysis because it was impossible to ascertain whether they actually remembered the patient's first name. Chi-square analysis revealed no significant effects of the patient characteristics on recall of the patient's name.

To assess recall of symptoms presented by the patient, several symptom indices were computed: (1) the number of symptoms correctly identified as among those presented by the patient, (2) the number of symptoms incorrectly identified as among those presented by the patient, and (3) the number of symptoms erroneously not identified as having been presented by the patient. A measure of the overall accuracy of symptom recall was computed by subtracting the number of

identification errors from the number of correct identifications. Finally, a series of ANOVAs, with the symptom recall indices as dependent measures and the patient characteristics as independent measures, was performed.

Contrary to expectations, age did not exert any significant effects on overall accuracy of symptom recall. However, a marginally significant effect of age was found, $F(1,80) = 3.48$, $p=.07$, for the number of symptoms correctly identified. Subjects correctly identified more of the symptoms of the younger patients (mean = 9.25) than of the older patients (mean = 8.89). No significant effects of patient gender were found. Subjects' recall of symptoms presented was better for the depressed than the nondepressed patients. Overall accuracy of symptom recall was better, $F(1,78) = 4.28$, $p<.05$, for the symptoms presented by depressed patients (mean = 8.02) than for those presented by nondepressed patients (mean = 7.17); the pattern of results was similar for the number of symptoms correctly identified, $F(1,80) = 7.826$, $p<.01$.

Choice of specialty area. The students were asked to indicate what specialty area they would probably choose; their responses were divided into primary-care and non-primary-care specialties. Primary-care specialists were defined as those physicians from whom a patient would be likely to seek treatment directly, rather than only by referral from another physician. Following this definition, the following specialties were classified as primary care:

Internal Medicine, Family Practice, Family Medicine, Pediatrics, Pediatric Internal Medicine, Obstetrics-Gynecology, Primary Care, and Psychiatry. Specialties considered non-primary-care were Radiation Oncology, Dermatology, Radiology, Surgery, Preventive Medicine, Otolaryngology, Orthopedics, Pediatric Radiology, Neurosurgery, Neurology, Pathology, Ophthalmology, Orthopedic Surgery, Urology, Emergency Medicine, and Anesthesiology. Based on this classification, 42 subjects indicated that they would probably choose a primary-care specialty, while 46 indicated that they would choose a non-primary-care specialty.

To determine whether medical students choosing to specialize in primary care had more positive attitudes toward older patients than those choosing not to specialize in primary care, a series of 2x2 ANOVAs was performed, with the patient attitude measures as the dependent variables. The factors examined were patient age and choice of primary care specialty. A statistically significant interaction, $F(1,84) = 4.98, p < .05$, of choice of specialty area and patient age was found for only one of the attitude measures. As shown in Figure 4, subjects who planned to specialize in primary care areas rated the older patients as requiring the most technical skill, while subjects who did not plan to specialize in primary care rated the younger patients as requiring the most technical skill.

Attitudes regarding the practice of medicine. One subject skipped one item on the Medical Student Belief Scale

(MSBS), and one subject skipped two items. For these subjects, the mean of the answered items was substituted for the unanswered items. Scale scores ranged from 49 to 99, with a mean of 71.1 and a standard deviation of 12.2. The mean and standard deviation are similar to those obtained by a sample of physicians (mean = 74.3, SD = 13.7) (Ashworth et al., 1984). Scores formed an approximately normal distribution.

To test the hypothesis that psychosocial orientation to patient care would be related to more positive attitudes toward older patients, two stepwise multiple regressions were performed, one predicting attitudes toward older patients and one predicting attitudes toward younger patients. Medical Student Belief Scale scores were entered as predictors, along with patient age, gender, and depressive status. Psychosocial orientation to patient care explained 18.0% of the variance in interest/enjoyment ratings for younger patients, $F(1,40) = 8.93$, $p < .05$. Psychosocial orientation to patient care predicted 24.7% of the variance, $F(1,40) = 15.03$, $p < .0005$, and patient gender predicted 8.5% of the variance, $F(1,40) = 5.19$, $p < .05$, in interest/enjoyment ratings for the older patients, with males rated as more interesting and enjoyable than females. As expected, psychosocial orientation was associated with more positive attitudes.

Subjects' mean ratings of the prestigiousness of various medical specialties are shown in Table 5. Mean prestige ratings ranged from a high of 75.89 for Cardiology

to a low of 46.61 for Psychiatry. Geriatrics received the second lowest rating, with a mean of 48.12.

Ratings of the prestige associated with Geriatric Medicine were moderately correlated with ratings of the prestige associated with Family Practice ($r=.44$, $p<.001$, two-tailed), Pediatrics ($r=.57$, $p<.001$, two-tailed), and Psychiatry ($r=.43$, $p<.001$, two-tailed). Prestige ratings for Geriatric Medicine were less strongly, although significantly, correlated with prestige ratings for Oncology, ($r=.26$, $p<.05$, two-tailed), Internal Medicine ($r=.30$, $p<.005$, two-tailed), and Obstetrics/Gynecology ($r=.28$, $p<.01$, two-tailed). Prestige ratings for Geriatric Medicine were not significantly correlated with the ratings for Pathology, Neurology, Allergy/Immunology, Surgery, Orthopedics, Ophthalmology, Cardiology, Urology, Gastroenterology, Dermatology, Otorhinolaryngology, or Anesthesiology.

Not surprisingly, Medical Student Belief Scale scores reflecting a less psychosocial orientation to patient care were negatively correlated with ratings of the prestige associated with Psychiatry ($r=-.21$, $p<.05$, one-tailed). While it was expected that attitudes toward Geriatric Medicine would be related to psychosocial orientation to patient care, results provided only marginal support for this prediction. Specifically, scores reflecting a less psychosocial approach were negatively correlated with prestige ratings for Geriatric Medicine ($r=-.15$, $p=.08$, one-tailed); this correlation approached but did not reach significance.

Medical student gender. The small number of female subjects in each experimental condition made it unfeasible to directly test for differences in male and female medical students' perceptions of patients as a function of the three patient characteristics. Instead, to investigate possible effects of medical student gender, 3-way ANOVAs conducted with the entire sample were repeated with only the male subjects, and the results of these analyses compared to those conducted using the entire sample. These ANOVAs examined the effects of patient age, gender, and depressive status on medical student beliefs, attitudes, intentions, and behavior. There were several noteworthy differences in the pattern of results obtained with the entire sample and those obtained using male subjects only. A significant interaction of patient sex and depressive status emerged for the belief that the patient was a hypochondriac, $F(1,53) = 8.68$, $p < .01$, when male subjects only were examined that had not been found with the entire sample. Also, a significant main effect of patient age appeared for the likelihood of initiating a consult with a nonpsychiatric physician, $F(1,51) = 4.46$, $p < .05$, with the likelihood of such a consult greater for older (mean = 35.63) than for younger patients (mean = 20.18).

To further investigate the possibility that medical student gender influences beliefs that the patient is a hypochondriac, a 3-way ANOVA was performed, with subject gender, patient gender, and patient depressive status as the factors. The results showed a significant 3-way interaction

$F(1,80) = 8.12, p < .01$; this interaction is depicted in Figure 5. Post hoc tests revealed that male medical students' rated female nondepressed patients as significantly more likely than female depressed patients to be hypochondriacal and rated male nondepressed patients as significantly less likely than female nondepressed patients to be hypochondriacal.

To further investigate the possibility that male medical students are more likely to initiate a consult with a nonpsychiatric physician for older than for younger patients, a 2-way ANOVA was performed, with subject gender and patient age as the factors. The results showed a marginally significant interaction of patient age and medical student gender, $F(1,82) = 3.61, p = .06$; however, post hoc tests revealed that no two groups were significantly different.

When males only were examined, interactions of patient age and depressive status were found for two of the symptom recall measures. First, there was a significant interaction of patient age and depressive status for the measure of overall accuracy of symptom recall, $F(1,51) = 1.08, p = .05$. Also, a significant interaction of patient age and depressive status, $F(1,51) = 9.64, p < .005$, was found for the number of symptoms incorrectly identified as among those presented by the patient.

To further pursue the relationship between medical student gender and overall accuracy of symptom recall, a 3-way ANOVA, with medical student gender, patient depressive status and patient gender was performed. Results showed a

marginally significant 3-way interaction, $F(1,78) = 3.63$, $p=.06$; however, post hoc tests showed that no two groups were significantly different.

To further investigate the relationship between medical student gender and incorrectly identified symptoms, a 3-way ANOVA, with patient age, depressive status, and medical student gender as the factors and number of symptoms incorrectly identified as the dependent measure, was performed. The results showed a significant 3-way interaction, $F(1,78) = 5.00$, $p<.05$, as shown in Figure 6. Post hoc tests showed that male medical students incorrectly identified significantly fewer symptoms for older depressed patients than for younger depressed patients and older nondepressed patients.

Predicting Behavior from Beliefs, Attitudes, and Intentions

To investigate the effects of beliefs, attitudes, and intentions on behavior, hierarchical multiple regressions were performed, with the overall accuracy of symptom recall as the dependent measure. The patient characteristics were entered first. The order of entry of the remaining variables was based on the Fishbein and Azjen model. Since, according to the model, intentions are the primary determinants of behavior, intentions were entered next. Attitudes were entered next, in order to assess their contribution to behavior independent of their effects on intentions. Beliefs were entered last, in order to assess their effects on

behavior independent of their effects on attitudes and intentions.

As shown in Table 6, beliefs, attitudes, and intentions did not increase the amount of variance explained over that explained by the patient characteristics. This suggests that, in general, medical student beliefs, attitudes, and intentions toward the patient did not directly influence symptom recall behavior, independently of the patient characteristics. However, ratings of interest and enjoyment increased the amount of variance explained (change in $r^2 = .040$, $F(1,62) = .375$, $p=.06$), with greater interest and enjoyment associated with better accuracy of symptom recall. The likelihood of consult with a nonpsychiatric physician significantly increased the amount of variance explained (change in $r^2 = .071$, $F(1,62) = 6.64$, $p<.05$), with greater likelihood ratings associated with more accurate symptom recall.

Medical School

To determine whether medical students from USUHS and other medical schools differ in their behavior toward patients over and above the influence of the patient characteristics, beliefs, attitudes, and intentions, medical school (USUHS vs. other) was entered into the regression equation last. As shown in Table 6, adding medical school as a predictor did not significantly increase the amount of variance explained.

Chapter 5

Discussion

The first hypothesis was that medical students would express more positive attitudes toward working with younger than with older patients. This hypothesis was not supported. There were no significant differences in the attitudes expressed by medical students toward older patients and those expressed toward younger patients on any of the attitude measures. Although patient age per se did not influence attitudes toward the patient, negative attitudes toward Geriatric Medicine were apparent. Not one subject expressed a desire to specialize in Geriatric Medicine. However, many of the subjects, because they are active-duty military, do not have the option of specializing in Geriatrics. Nonetheless, the rating of Geriatric Medicine as one of the least prestigious specialties suggests negative attitudes toward this specialty area.

The second hypothesis was that medical students would rate older patients as more emotionally ill and be more likely to diagnose older patients as suffering from depression than younger patients. This hypothesis was not supported. Older and younger patients were equally likely to be diagnosed as depressed, to be rated as emotionally ill, and to be viewed as hypochondriacal.

The third hypothesis was that medical students would give less favorable prognoses to older than to younger

patients. This hypothesis was not supported in that no age differences in prognoses were found.

The fourth hypothesis was that medical students would be less likely to refer older patients than younger patients for psychiatric assistance. This hypothesis was not supported; no age differences in likelihood ratings of referrals for psychiatric assistance were found.

The fifth hypothesis was that medical students would remember less of the personal information presented by older patients compared to that presented by younger patients. This hypothesis was not supported. In fact, medical students were more likely to accurately recall the age of the older patients. Three out of the four symptom recall measures showed no significant differences as a function of patient age. The fourth symptom recall measure, the number of symptoms presented by the patient and correctly recalled, showed a marginally significant difference as a function of patient age, with cell means showing better recall of the symptoms presented by younger patients than by older patients.

The sixth hypothesis was that medical students who plan to specialize in primary care areas of practice would express more positive attitudes toward older patients than their colleagues who plan to specialize in non-primary-care areas. This hypothesis received little support. A significant interaction of patient age and choice of primary-care vs. non-primary-care specialty area was found for ratings of the amount of technical skill required. On the one hand,

medical students choosing primary care areas do not seem to enjoy working with older patients more than medical students choosing other specialty areas; however, they do seem to recognize better the complexity of medical problems in the elderly, which other medical students tend to discount. The discounting of the amount of technical skill required to treat older patients represents a potentially harmful bias on the part of medical students preferring non-primary-care specialties.

The seventh hypothesis was that medical students who were more psychosocially oriented toward patient care would express more positive attitudes toward older patients than medical students who were less psychosocially oriented. This hypothesis was supported by the data. However, the importance of examining attitudes toward younger and older patients is underscored by the finding that more psychosocially oriented medical students find both older and younger patients more interesting and enjoyable than their colleagues.

The results from this study do not corroborate previous findings that medical students' reactions to elderly patients would be influenced by negative stereotypes of older people. Previous studies which found that medical students have negative attitudes toward older patients may have, by presenting little information about the patient other than age, forced subjects to rely on stereotypes regarding older people. Another possible explanation for the discrepancy of results between this and previous studies is that the

relatively recent emphasis on providing geriatric education to medical students has produced positive changes in the attitudes of medical students toward older patients. Alternatively, this cohort of older patients may somehow differ from previous cohorts in ways that influence medical student attitudes.

There are several possible explanations for the negative attitudes of medical students toward Geriatric Medicine. First, medical students may not receive much exposure to Geriatric Medicine or to physician role models interested in Geriatrics. Second, medical students may associate Geriatric Medicine with the treatment of the chronically ill; however, the relatively high prestigiousness ratings given to Cardiology and Oncology argue against the notion that specialties that focus on the chronically ill are devalued. Third, medical students may share physicians' dislike of treating patients with symptoms due to the normal aging process (Baker, 1984). Fourth, negative attitudes toward older women may be responsible for the lack of prestige associated with Geriatrics. Because females tend to live longer and utilize health care services more frequently than males, the practice of Geriatric Medicine consists largely of providing treatment to elderly women. This study found only weak support for negative attitudes toward elderly women among medical students. Finally, attitudes toward Geriatric Medicine may be due to beliefs that the specialty is not as lucrative as other specialties because of the high percentage

of Medicare and Medicaid patients and regulations concerning reimbursement for care provided to these patients.

While the hypothesis that older patients would be less likely to be referred for psychological or psychiatric assistance was not substantiated, the treatment of depressed patients with identical symptoms may be influenced by the patient's age. For example, older depressed patients were more likely than other patients to receive referrals to physicians who were not psychiatrists. During the interviews, many of the subjects expressed a desire to rule out organic illness before investigating psychosocial issues; the data suggest that medical students may be especially likely to do so with older patients. Also, there was evidence to suggest that medical students may be more likely to recommend antidepressant medications for the older than for the younger patients. This finding is consistent with previous research (Ford & Sbordone, 1980) indicating a greater tendency for psychiatrists to prescribe antidepressant medications for older depressed women than for younger depressed women. While this tendency to treat depression in older people pharmacologically is compatible with a view of older patients as less responsive to psychotherapy than younger patients, the lack of an age difference in referrals for psychological or psychiatric assistance argues against this as an explanation. The findings suggest, instead, a more organically-based approach to depression in older people. A greater tendency to treat older people who are depressed with antidepressants

may reflect a belief that older people respond particularly well to antidepressants. It could also reflect a view that depression in older people is more likely to be organically rather than psychosocially based. The appropriateness of this approach in a patient who has psychosocial life circumstances to which the depression could be attributed, as in this dissertation study, is questionable.

The better recall of patient age for older patients suggests that age may be a salient factor influencing medical student responses to the older patients. That subjects were not aware of the influence of patient age is suggested by interview responses to the question "What factors influenced your decision-making concerning this patient?" Very few subjects volunteered patient age as a factor that entered into the decision-making process. When age was mentioned by the subject, it was generally in the context of differences in the incidence of particular medical conditions (e.g., cancer) as a function of age.

While age did not influence beliefs about the patient's medical condition, patient gender did. The complaints of male patients were viewed as more indicative of serious physical illness than the complaints of female patients. However, consistent with previous research with physicians (McCranie, Howowitz, & Martin, 1978), the present study found no differences in medical students' ratings of the perceived seriousness of the symptoms of male and female patients with identical presenting complaints. Apparently,

medical personnel distinguish between perceived seriousness of symptoms and perceived seriousness of illness; the present study shows that the two are only moderately correlated. To illustrate, contrast silent ischemia, a serious asymptomatic medical condition, with severe cystic acne, a less medically serious condition with troublesome symptoms.

The treatments recommended for male and female patients differed in several ways. The results suggest that male patients may not receive emotional support or medication as readily as female patients, but may be referred for diagnostic work more readily than female patients. Specifically, counseling and reassurance were rated as more likely for depressed female than for depressed male patients. Furthermore, medication, specifically medication for back pain, was more likely to be recommended for females than for males. On the other hand, medical students were more likely to recommend laboratory tests for male than for female patients, and they indicated a greater likelihood of referring depressed males than either females or nondepressed males to another physician. However, no gender differences in referral for psychiatric or psychological assistance were found, and depression diagnoses were equally likely for male and female patients. This suggests that medical students may weigh more heavily the possibility of serious physical illness in depressed males compared to other patient groups.

Some aspects of the differential treatment of male and female patients in this study are consistent with previous

research on this topic. For example, one study (Armitage, Schneiderman, & Bass, 1979) found that male family physicians gave more extensive and more appropriate work-ups for male patients than for female patients with the same type of presenting complaint. Another study (Bernstein & Kane, 1981) reported that physicians rated women patients as more likely to make excessive demands, to have psychosomatic ailments, and to have complaints which were emotionally-based. This sex difference was apparent only when the patient did not express psychosocial concerns; when both male and female patients discussed a psychosocial concern, no sex difference was apparent. The present study's lack of effects of patient sex on subjects' beliefs that the patient was emotionally ill, that the patient was a hypochondriac, and that the patient was depressed may be due to the fact that all patients mentioned a psychosocial problem, specifically, the move into a smaller house prompted by financial difficulties.

The physical complaints of depressed patients were viewed as more indicative of serious illness than the complaints of nondepressed patients. Furthermore, medical students' recall of symptoms presented was better for the depressed than the nondepressed patients, suggesting that they may have listened better to the depressed patients. The depressed patients complained of weight loss, which may have been viewed as an indicator of a serious illness. The nondepressed patients, in comparison, mentioned but then discounted the possibility of weight loss. Another possible

explanation is that medical students may be influenced by patients' perceived seriousness of their symptoms, which may be inferred from patients' affect during symptom presentation. Alternatively, since physical illness may cause depression, depressed affect may be viewed as an indicator of a more serious physical condition. Since depression may be caused by hypothyroidism and other symptoms presented were consistent with a hypothyroidism diagnosis, patients who sounded depressed may have been believed to be suffering from a more serious thyroid condition than patients who did not sound depressed.

Several aspects of the design of this study may limit the generalizability of the findings. While controlling for differences in symptom presentation and the nature of the medical complaints presented was necessary to test for the effects of patient age and gender per se, in reality older patients may present with different symptoms and in a different manner than younger patients, and male patients may present differently than female patients. Another potential limitation is that differences that seemed to be due to patient age, gender, or depressive status may instead be the result of unintended differences in the patient portrayals. However, the actors and actresses were not informed of the hypotheses prior to recording their patient portrayals and they worked together and with the experimenter to ensure uniformity of delivery style. Nonetheless, future research should minimize this problem by using several stimuli for each

experimental condition, perhaps through presentation of actual patients.

Another possible shortcoming lies in the nature of the behavioral measure. The measure of how well the medical students listened to the patients could have reflected subjects' ability to remember what the patient said as well as their listening attentiveness. Furthermore, the symptom "recall" measure is more precisely described as a recognition rather than a recall task, since subjects responded to a symptom checklist. Actual recall of patient information is likely to be a more difficult task and is more analogous to the behavior involved in interacting with patients.

Another problem with this study is that because of the large number of statistical analyses performed, experiment-wise error may be high. While adopting a more stringent alpha level was considered, the advantages were outweighed by the importance of detecting negative attitudes and behaviors that might compromise the quality of medical care provided to some patient groups.

Because of the small number of female medical students in each experimental condition, it was not feasible to adequately examine the possible influence of medical student gender on medical students' perceptions and treatment of patients who vary in age, gender, and depressive status. However, the results of this study suggest that medical student gender merits future investigation as a factor likely to influence perceptions of patients.

A major contribution of this study is its examination of the relationship between attitudes and behavior. In general, the attitudes assessed did not influence the behavioral measure of symptom recall accuracy. The relationship between interest and enjoyment and the behavior of recalling the symptoms presented by the patient suggests that medical students listen more attentively to the complaints of patients who they find more pleasurable to treat. However, since there were no significant main effects of patient age on ratings of interest and enjoyment, this relationship between attitudes and behavior merely indicates that medical students may provide better medical care to patients who they enjoy treating, regardless of patient age.

The time has come for researchers investigating the attitudes of medical students toward older patients to move beyond simply asking subjects to respond to abstract concepts of older people and older patients. Instead, researchers should assess medical students' reactions to specific patients who vary in some predetermined manner. Future research should focus on the predictors and consequences of attitudes toward patients of different ages. Predictors to examine include patient characteristics such as manner of symptom presentation, gender, and affect, and medical student characteristics such as gender and psychosocial orientation to patient care. Consequences to examine include adequacy of communication between medical students and patients, and the appropriateness of the medical care provided. Assumptions

that negative attitudes toward older patients result in poor quality of care for these patients must be tested empirically.

Chapter 6

Conclusions

This study does not support the notion that medical students have negative stereotypes of older patients that influence their behavior toward individual patients. While some studies have found that medical students have unfavorable attitudes toward older patients, these studies used a methodology that forced subjects to rely on stereotypes. One possible explanation of the findings of this study is that when a medical student or a physician actually encounters an older patient, whatever negative stereotypes he or she may have about older people move to the background while the symptoms and problems of the patient are the central focus and the primary determinants of the nature of the interaction. Another possible explanation for the differences between the results of this and previous studies is that the attitudes of medical students toward older patients may be improving. Medical educators have been devoting greater attention to teaching medical students about psychosocial factors and geriatric medicine; these efforts may have produced positive changes in attitudes. Yet another possible explanation is that older people may be changing in ways that medical students perceive to be more positive.

This study corroborates previous findings of differences in the treatment provided to male and female patients. However, no evidence of derogatory attitudes toward

female patients was found. While males were considered more likely to be seriously ill, female patients were not more likely to be dismissed as hypochondriacal. These perceptions may be realistic. Since males utilize health care less frequently than females, they may actually be more seriously ill when they do seek treatment.

The finding that depressed patients were perceived as more seriously ill than nondepressed patients was unexpected, as was the finding that medical students listened better to the complaints of the depressed than the nondepressed patients. Future research should attempt to replicate this finding. These results may be due to the fact that the depressed patients complained of weight loss, which although intended as a flag for depression may also have alerted the medical students to the possibility of serious physical illness.

While many studies have measured attitudes and assumed that they influenced behavior, or assessed behavior and assumed that it reflected attitudes, this study actually investigated the relationship between beliefs, attitudes, intentions, and behavior. The results of this study indicate that, in general, beliefs, attitudes, and intentions of medical students toward patients do not influence their behavior toward them. The only attitudinal measure influencing how well subjects listened to the patient was the measure of how interesting and enjoyable treating the patient would be.

Since psychosocial orientation to patient care did predict how well medical students listened to patients, efforts to improve the quality of care provided to older patients should perhaps focus on training medical students to be more psychosocially oriented. These efforts are likely to improve the quality of care for younger patients as well. Medical educators interested in attracting medical students to specialize in Geriatric Medicine should explore further the reasons for the lack of prestige associated with this specialty area.

Chapter 7

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Appendix A

Letter Inviting Medical Students' Participation in Study



UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES

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4301 JONES BRIDGE ROAD
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April 11, 1989



MEDICAL PSYCHOLOGY

TEACHING HOSPITALS

WALTER REED ARMY MEDICAL CENTER

NAVAL HOSPITAL, BETHESDA

MALCOLM GROW AIR FORCE MEDICAL CENTER

WILFORD HALL AIR FORCE MEDICAL CENTER

Dear Advanced Medical Student:

As a graduate student in Medical Psychology at the Uniformed Services University of the Health Sciences, I am working on my dissertation, a study of learning and clinical decision-making in medical students. I am writing to ask that you help by volunteering approximately one hour of your time to participate in my study. By doing so, you can earn \$10.00.

My dissertation evaluates the efficacy of different formats for presenting patient information to determine which format best facilitates sound clinical decision-making in medical students with different interests, learning styles, experiences, and attitudes. Students who participate will receive information about a patient through either a written transcript, an audiotape, or a videotape. They will complete questionnaire items asking for their medical judgments concerning the patient. They will also provide information about their educational backgrounds, clinical experiences, and attitudes regarding the practice of medicine.

Your performance on the questionnaire items is of interest only as it relates to the hypotheses being tested; you will not be evaluated in any way. Your responses will be kept strictly confidential; your name will not be associated with your responses.

Because of the complexity of judgments required, only third- and fourth-year medical students like yourself are eligible to participate. Laboratory sessions will be scheduled at your convenience; day, evening, and weekend times are available. If desired, arrangements can be made to conduct the session at your medical school.

If you would like to participate or would like more information, please call 295-3263 or mail the enclosed response sheet in the self-addressed, postage-paid envelope.

Thank you very much.

Sincerely,

Victoria Wilcox
Doctoral Candidate

Enclosures



Appendix B

Scripts for Patient Portrayals

Script for Nondepressed Patient

Hello. I'm (Mary, Mark) Anderson. The reason I'm here is that I haven't been feeling well lately. For one thing, my back has been hurting. The pain is sort of a dull ache in my lower back. My neck sometimes also hurts, but the pain is worse in my lower back. Just before my back started hurting, I spent an entire day doing yard work. Maybe I overdid it, I don't know, but it's been three weeks since then and it isn't getting better. If anything, it's getting worse. I don't know if this is related, but I also have indigestion. The first time I noticed this was when I was eating with my (husband, wife); we were at an Italian restaurant--that was, oh, I guess about 2 weeks ago or so. I remember it because this was our (10th, 45th) wedding anniversary. We went to a wonderful restaurant and even ordered drinks, which we don't usually do--we only drink on special occasions. I ordered a whiskey sour, and my (husband, wife) had a vodka collins. I'd wanted this to be a special moment for us because this was our (10th, 45th) anniversary and all, but my indigestion spoiled that. Before I even finished eating, I felt nauseous all of a sudden in my stomach. I excused myself from the table and rushed to the restroom. I thought I was going to throw up; fortunately that didn't happen, but I felt sick the entire evening. At first I thought it was spicy food that caused it, but then this same

feeling began to occur more frequently. Now I have indigestion a lot of the time. I've also been cold a lot lately, even when it's hot outside. I keep turning the thermostat up, and my (husband, wife) keeps turning it down. And I haven't been eating as much as usual, but may be because of indigestion. Last Sunday for example I had my (32nd, 67th) birthday. I usually eat seconds on birthday cake, especially when the party is for me. I didn't have any cake. It was too much. Food just hasn't appealed to me lately--although I usually have a good appetite. I don't think I've lost any weight; oh, maybe a pound or so, but it's hard to tell. This may sound strange, but I've noticed that my skin has been very dry and flaky. On top of that I often feel tired--and weak. I've been working hard around the house--maybe that's it. I don't know. We just moved from a large house into a smaller house--We couldn't afford the large one anymore--but the smaller house needs a lot of work. I work on it sometimes until I'm exhausted. To make matters worse, I sometimes wake up early in the morning--before my alarm goes off--but this may be because my neighbors just got a new dog and when they let it outside in the morning it barks a lot. It's hard to get anything done when you feel so exhausted and weak much of the time. I'm concerned that something might be seriously wrong with me.

Script for Depressed Patient

Hello. I'm (Mary, Mark) Anderson. The reason I'm here is that I haven't been feeling well lately. For one thing, my back has been hurting. The pain is sort of a dull ache in

my lower back. My neck sometimes also hurts, but the pain is worse in my lower back. Just before my back started hurting, I spent an entire day doing yard work. Maybe I overdid it, I don't know, but it's been three weeks since then and it isn't getting better. If anything, it's getting worse. I don't know if this is related, but I also have indigestion. The first time I noticed this was when I was eating with my (husband, wife); we were at an Italian restaurant--that was, oh, I guess about 2 weeks ago or so. I remember it because this was our (10th, 45th) wedding anniversary. We went to a wonderful restaurant and even ordered drinks, which we don't usually do--we only drink on special occasions. I ordered a whiskey sour, and my (husband, wife) had a vodka collins. I'd wanted this to be a special moment for us because this was our (10th, 45th) anniversary and all, but my indigestion spoiled that. Before I even finished eating, I felt nauseous all of a sudden in my stomach. I excused myself from the table and rushed to the restroom. I thought I was going to throw up; fortunately that didn't happen, but I felt sick the entire evening. At first I thought it was spicy food that caused it, but then this same feeling began to occur more frequently. Now I have indigestion a lot of the time. I've also been cold a lot lately, even when it's hot outside. I keep turning the thermostat up, and my (husband, wife) keeps turning it down. And I haven't been eating as much as usual, but may be because of indigestion. Last Sunday for example I had my (32nd, 67th) birthday. I usually eat seconds on birthday cake, especially

when the party is for me. I didn't have any cake. It was too much. Food just hasn't appealed to me lately--although I usually have a good appetite. I know I've lost weight; at least 5 lbs. or so. My clothes fit more loosely than they used to. This may sound strange, but I've noticed that my skin has been very dry and flaky. On top of that I often feel tired--and weak. I've been working hard around the house--maybe that's it. I don't know. We just moved from a large house into a smaller house--We couldn't afford the large one anymore--but the smaller house needs a lot of work. I work on it sometimes until I'm exhausted. To make matters worse, I've been waking up early in the morning--before my alarm goes off...maybe even an hour or so early! It's hard to get anything done when you feel so exhausted and weak much of the time. I'm concerned that something might be seriously wrong with me.

Appendix C

Physician Questionnaire

In answering the following items, imagine that you are the attending physician for the patient that you just read about and you must make a number of judgments about how to diagnose and treat this patient.

Based on the information presented, please indicate the most likely diagnosis or diagnoses of the patient's condition.

Please indicate how likely it is that you would initiate the following medical interventions at the initial visit by placing an "X" at the appropriate point on each line.

Counselling and reassurance

extremely _____ not at all
likely _____ likely

Laboratory testing

extremely _____ not at all
likely _____ likely

Please specify what laboratory tests you would order.

Medication

extremely _____ not at all
likely _____ likely

Please specify what medication you would recommend. (It is not necessary to specify dosage.)

Outpatient medical procedure

extremely _____ not at all
likely _____ likely

Please specify what type of outpatient procedure you would initiate.

Inpatient medical procedure

extremely _____ not at all
likely _____ likely

Please specify what type of inpatient procedure you would initiate.

Request for psychological/psychiatric consultation

extremely _____ not at all
likely _____ likely

What would you request?

Request for other physician consultation

extremely _____ not at all
likely _____ likely

What would you request?

Appendix D
Summary of the Responses of Six
Family Practice Physicians

Diagnoses

Depression Less Salient Group

- Subject 1. Depression
R/O Hypothyroidism; gastroesophageal reflux
or PUD
R/O Angina, cardiomyopathy/early congestive
heart failure
R/O Alcohol abuse (at least get a better
history)
- Subject 2. Anxiety/Depression/Stress Reaction
- Subject 3. Hypothyroidism vs. Depression

Depression More Salient Group

- Subject 4. Hypothyroidism
R/O Depression
R/O Gastrointestinal neoplasia
- Subject 5. Cervical and lumber strain/spasm
Possible depression
Possible hypothyroidism
Possible peptic ulcer
- Subject 6. Anxiety/depression
Anemia
Hypothyroid
Gastritis/hiatal hernia

CONCLUSIONS REGARDING DIAGNOSES:

All but one M.D. included depression and hypothyroidism as possible diagnoses. Unfortunately, the deviant M.D. was in the Depression Less Salient Group and listed depression without listing hypothyroidism as a possible diagnosis.

Other than the diagnoses of hypothyroidism and depression, there was little agreement among physicians. Anxiety was listed as a possibility by two physicians. One physician in the Depression Less Salient group and all three physicians in the Depression More Salient group listed various

gastrointestinal diagnoses, although they showed little agreement as to the specific diagnosis.

Medical Interventions

NOTE: FOR THESE ITEMS, 0 INDICATES THAT M.D. IS EXTREMELY LIKELY TO INITIATE INTERVENTION, AND 10 INDICATES THAT M.D. IS NOT AT ALL LIKELY TO INITIATE INTERVENTION.

Depression Less Salient Group

- Subject 1. Counselling and reassurance 0.8
Laboratory testing 0.4
Medication 7.5
Outpatient medical procedure 0.5
Inpatient medical procedure 9.5
Request psychological/psychiatric consultation 9.4
Request other M.D. consultation 9.2
- Subject 2. Counselling and reassurance 5.0
Laboratory testing 7.8
Medication 9.1
Outpatient medical procedure 0.4
Inpatient medical procedure 9.4
Request psychological/psychiatric consultation 8.4
Request other M.D. consultation 9.7
- Subject 3. Counselling and reassurance 0.0
Laboratory testing 0.0
Medication 10.0
Outpatient medical procedure 10.0
Inpatient medical procedure 10.0
Request psychological/psychiatric consultation 6.2
Request other M.D. consultation 9.7

Depression More Salient Group

- Subject 4. Counselling and reassurance 9.5
Laboratory testing 0.4
Medication 7.2
Outpatient medical procedure 0.6
Inpatient medical procedure 9.6
Request psychological/psychiatric consultation 9.4
Request other M.D. consultation 9.3
- Subject 5. Counselling and reassurance 3.4
Laboratory testing 0.6
Medication 2.3
Outpatient medical procedure 9.5

Inpatient medical procedure 9.8
 Request psychological/psychiatric
 consultation 9.1
 Request other M.D. consultation 9.5

- Subject 6. Counselling and reassurance 3.6
 Laboratory testing 1.6
 Medication 9.4
 Outpatient medical procedure 10
 Inpatient medical procedure 9.9
 Request psychological/psychiatric
 consultation 9.7
 Request other M.D. consultation 10

Specific Medical Interventions Recommended

Depression Less Salient Group

- Subject 1. Lab tests. Thyroid Function Tests &
 Thyroid-stimulating Hormone, LFTs
 Outpatient medical procedure. Ba swallow,
 Upper GI series, EKG
- Subject 2. Outpatient medical procedure. Get old
 records, get more history, and do brief
 physical.
- Subject 3. Lab tests. Complete Blood Count, Thyroid
 Function Tests
 Psychological/psychiatric Consult.
 Psychometrics, family therapy

Depression More Salient Group

- Subject 4. Lab tests. Thyroid functions, CBC,
 amylase
 Outpatient procedure. Upper GI
- Subject 5. Lab tests. CBC, thyroid panel
 Medication. Antacid (Mylanta II),
 acetaminophen
 Outpatient medical procedure. Administer
 a depression scale.
- Subject 6. Lab tests. CBC, Thyroid function

CONCLUSIONS REGARDING ASSESSMENT AND TREATMENT:

Five out of six physicians said they would order thyroid tests. Four out of six said they would order a complete blood count. Other suggestions were GI tests (2 M.D.s) and psychological assessment (2).

Depression Less Salient Group: 2 out of 3 M.D.s said they would order thyroid tests; 1 said he would request psychological assessment and treatment.

Depression More Salient Group: All 3 M.D.s said they would order thyroid tests and CBCs; 1 said he would perform psychological assessment.

MEANS ON MEDICAL INTERVENTIONS ITEMS:

<u>Medical Interventions</u>	<u>Less Salient Group</u>	<u>More Salient Group</u>
Counselling/Reassurance	1.9	5.5
Lab Tests	2.7	0.9
Medication	8.9	6.3
Outpatient Procedure	3.6	6.7
Inpatient Procedure	9.6	9.8
Psych Consult	8.0	9.4
Other Consult	9.5	9.6

CONCLUSIONS REGARDING INTERVENTIONS GROUP COMPARISONS:

M.D.s in the Less Salient Group were more likely to indicate counselling and reassurance than those in the More Salient Group. However, the More Salient Group was more likely to initiate a psych consult. Those in the More Salient Group were more likely to initiate lab tests and medication than those in the Less Salient Group. The Less Salient Group was more likely to initiate outpatient procedures. The groups were about equally likely to initiate inpatient procedures and non-psychological consultations.

Appendix E
Medical Student Questionnaires

STUDY OF LEARNING AND CLINICAL DECISION-MAKING
IN MEDICAL STUDENTS

Learning Style Items

Which of the following statements best describes you? Please check only one.

- ☐ a. I learn best by reading.
☐ b. I learn best when material is presented orally.
☐ c. I learn best when material is presented visually.

Which of the following methods of presentation of clinical information do you find most interesting? Please circle only one.

- ☐ a. Written text
☐ b. Audiotape
☐ c. Videotape

Clinical Judgment Items

Based on the information presented, please indicate the most likely diagnosis or diagnoses of the patient's condition. If listing more than one, please list in order of probability. It is OK to include secondary and rule out diagnoses.

How confident are you of your diagnosis or diagnoses? Place an "X" at the point on the line that best corresponds to your confidence in your diagnosis.

not at all _____ very

Overall, how would you rate the patient's general state of physical health? Check the option that best applies:

- ☐ a. Poor
- ☐ b. Fair
- ☐ c. Good
- ☐ d. Excellent

How confident are you of the accuracy of this rating? Indicate your response by placing an "X" at the appropriate point on the line.

not at all _____ very

Overall, how would you rate the patient's state of emotional health? Check the option that best applies:

- ☐ a. Poor
- ☐ b. Fair
- ☐ c. Good
- ☐ d. Excellent

How confident are you of the accuracy of this rating? Indicate your response by placing an "X" at the appropriate point on the line.

not at all _____ very

Please evaluate the patient's overall prognosis. Check the option that best applies:

- ☐ a. Poor
- ☐ b. Fair
- ☐ c. Good
- ☐ d. Excellent

How confident are you of the accuracy of this prognosis? Indicate your response by placing an "X" at the appropriate point on the line.

not at all _____ very

Which of the following best describes the seriousness of the patient's symptoms? Check the option that best applies:

- ☐ a. Minor
☐ b. Moderately serious
☐ c. Very serious

How confident are you that you have accurately assessed the seriousness of the patient's symptoms? Indicate your response by placing an "X" at the appropriate point on the line.

not at all _____ very

Do you think that the current illness episode will necessitate hospitalization? Check the option that best applies:

- ☐ a. Yes
☐ b. No

How confident are you of your prediction regarding the necessity of hospitalization? Indicate your response by placing an "X" at the appropriate point on the line.

not at all _____ very

What is the likelihood that the patient is seriously ill? Indicate your response by placing an "X" at the appropriate point on the line.

not at all _____ extremely
likely likely

How confident are you that you have accurately perceived the likelihood that the patient is seriously ill? Indicate your response by placing an "X" at the appropriate point on the line.

not at all _____ very

What is the likelihood that the patient is a hypochondriac? Indicate your response by placing an "X" at the appropriate point on the line.

not at all _____ extremely
likely likely

How confident are you that you have accurately perceived the likelihood that the patient is a hypochondriac? Indicate your response by placing an "X" at the appropriate point on the line.

not at all _____ very

Were any of the patient's speech characteristics or mannerisms important to you in evaluating the patient's condition? Check the option that best applies:

- _____ a. No
 _____ b. Yes

If yes, please specify. _____

Medical Intervention Items

Imagine that you are the attending physician for this patient. Please rate the likelihood that you would initiate the following medical interventions at the initial visit by placing an "X" at the appropriate point on each line.

Counselling and reassurance

not at all _____ extremely
 likely likely

Laboratory testing

not at all _____ extremely
 likely likely

Please specify what laboratory tests you would order.

Medication

not at all _____ extremely
 likely likely

Please specify what medication you would prescribe or recommend. (It is not necessary to specify dosage.)

Outpatient medical procedure

not at all _____ extremely
likely _____ likely

Please specify what type of outpatient procedure you would initiate.

Inpatient medical procedure

not at all _____ extremely
likely _____ likely

Please specify what type of inpatient procedure you would initiate.

Request for psychological/psychiatric consultation

not at all _____ extremely
likely _____ likely

What would you request?

Request for other physician consultation

not at all _____ extremely
likely _____ likely

What would you request?

Clinical Perception Items

For the following items, please indicate your response by placing an "X" at the point on the line that best describes your perceptions.

How interesting is this case?

not at all—————very

How difficult is this case?

easy—————difficult

How challenging is this case?

not at all—————very

How much technical skill is required for managing this case?

very little—————a lot

How important are the physician's interpersonal skills in treating this patient?

unimportant—————critical

How much would you enjoy treating this patient?

not at all—————very much

Sentence Completion Items

Based on the material presented, please complete the following sentences to reflect your perceptions.

This patient is _____

This patient's medical complaints are _____

Treating this patient would be _____

Information Recall Items

What is the patient's name? _____

What is the patient's age? _____

Please indicate with an "X" the symptoms mentioned by the patient.

<input type="checkbox"/> Abdominal Cramps	<input type="checkbox"/> Anxiety
<input type="checkbox"/> Back Pain	<input type="checkbox"/> Chest Pain
<input type="checkbox"/> Cold Sensitivity	<input type="checkbox"/> Constipation
<input type="checkbox"/> Coughing	<input type="checkbox"/> Depression
<input type="checkbox"/> Diarrhea	<input type="checkbox"/> Difficulty Concentrating
<input type="checkbox"/> Difficulty Sleeping	<input type="checkbox"/> Dizziness
<input type="checkbox"/> Dry Skin	<input type="checkbox"/> Fatigue
<input type="checkbox"/> Headache	<input type="checkbox"/> Indigestion
<input type="checkbox"/> Itching	<input type="checkbox"/> Irritability
<input type="checkbox"/> Joint Pain	<input type="checkbox"/> Loss of Appetite
<input type="checkbox"/> Memory Impairment	<input type="checkbox"/> Muscle Pain
<input type="checkbox"/> Nausea	<input type="checkbox"/> Nervousness
<input type="checkbox"/> Painful Urination	<input type="checkbox"/> Shortness of Breath
<input type="checkbox"/> Sinus Congestion	<input type="checkbox"/> Sneezing
<input type="checkbox"/> Urinary Frequency	<input type="checkbox"/> Weakness
<input type="checkbox"/> Weight Loss	<input type="checkbox"/> Weight Gain

Background Information

Your Sex ☐ Female ☐ Male

Your Age _____

Year in Medical School

☐ First ☐ Second ☐ Third ☐ Fourth

What specialty area do you think you are most likely to choose?

Have you worked with outpatients as part of your medical school training?

☐ Yes ☐ No

If yes, please indicate how you gained that experience (e.g., "through Family Practice rotation")

What rotation are you currently taking? _____

Please list below all required rotations you have completed.

Please list below all elective rotations you have completed.

If you have had experience working with patients prior to medical school, please briefly describe the nature of that experience (for example, "3 years as a medic," or "4 years as a social worker").

Following is a list of specific patient populations. Please indicate how much experience you have had with patients in each of these groups. Include in your considerations any experience you have had with each patient group, regardless of whether it occurred as part of your formal medical training or not--for example, volunteer work in a health care setting). Indicate your response by placing an "X" at the appropriate point on the line.

Ethnic Minorities

none _____ extensive

Children

none _____ extensive

Adolescents

none _____ extensive

Elderly

none _____ extensive

Physically Handicapped

none—————extensive

Mentally Retarded

none—————extensive

Emotionally Disturbed

none—————extensive

Following is a list of specific nonpatient populations. Please indicate how much experience you have had with nonpatients in each of these groups. Indicate your response by placing an "X" at the appropriate point on the line.

Ethnic Minorities

none—————extensive

Children

none—————extensive

Adolescents

none—————extensive

Elderly

none—————extensive

Physically Handicapped

none—————extensive

Mentally Retarded

none—————extensive

Emotionally Disturbed

none—————extensive

Please rate the following medical specialties in terms of how much status you associate with each, relative to other specialty areas. Place an "X" at the appropriate place on the line to indicate your perception.

Pathology

low status _____ high status

Internal Medicine

low status _____ high status

Obstetrics/Gynecology

low status _____ high status

Family Practice

low status _____ high status

Neurology

low status _____ high status

Oncology

low status _____ high status

Allergy/Immunology

low status _____ high status

Pediatrics

low status _____ high status

Psychiatry

low status _____ high status

Surgery

low status _____ high status

Orthopedics

low status—————high status

Geriatrics

low status—————high status

Ophthalmology

low status—————high status

Cardiology

low status—————high status

Urology

low status—————high status

Gastroenterology

low status—————high status

Dermatology

low status—————high status

Otorhinolaryngology

low status—————high status

Anesthesiology

low status—————high status

Table 1
Subject Characteristics by Experimental Condition

Experimental Condition	Female	Male	Median Age
1	3	8	30.0
2	3	8	25.0
3	4	7	27.0
4	4	7	26.0
5	3	8	26.0
6	3	8	26.0
7	4	7	26.0
8	3	8	26.0
Entire Sample	27	61	26.5

Table 2

Intercorrelations Between Attitude Items

Item	2	3	4	5	6
1. Interest	.22*	.43***	.33**	.04	.67***
2. Difficult	---	.72***	.42***	.09	.12
3. Challenging		---	.43***	.24*	.24*
4. Technical Skill			---	.14	.18
5. Personal Skill				---	.08
6. Enjoy					---

* $p < .05$, two-tailed

** $p < .01$, two-tailed

*** $p < .001$, two-tailed

Table 3
Intercorrelations Between Belief Measures

Belief	2	3	4	5	6	7
1. Patient is physically well.	.42***	.59***	.15	.32**	.03	.11
2. Patient is emotionally well.	---	.36***	.20*	.08	.12	.02
3. Prognosis is good.		---	.10	.31**	-.12	.03
4. Symptoms are serious.			---	-.08	.42***	-.21*
5. Hospitalization is not needed.				---	-.15	-.09
6. Patient is seriously ill.					---	-.06
7. Patient is a hypochondriac.						---

* $p < .05$, one-tailed

** $p < .01$, one-tailed

*** $p < .001$, one-tailed

Table 4
Intercorrelations Between Intentions Ratings

Intended Intervention	2	3	4	5	6	7
1. Counseling/ Reassurance	.00	.18	-.17	-.08	.17	-.01
2. Laboratory tests	---	-.11	.09	.13	-.19	.18
3. Medication		---	.24*	.22*	.28*	.12
4. Outpatient procedure			---	.28*	.09	.19
5. Inpatient procedure				---	.24*	.48**
6. Psychiatric consult					---	.26*
7. Nonpsychiatric consult						---

* $p < .05$, two-tailed

** $p < .001$, two-tailed

Table 5
Mean Prestige Ratings of Medical Specialties

Specialty	Prestige Rating
Cardiology	75.89
Surgery	72.53
Urology	70.69
Ophthalmology	69.26
Internal Medicine	68.52
Otorhinolaryngology	68.18
Orthopedics	68.04
Oncology	66.72
Gastroenterology	65.30
Anesthesiology	63.85
Obstetrics-Gynecology	58.82
Neurology	58.10
Dermatology	55.11
Pediatrics	53.36
Family Practice	49.48
Allergy-Immunology	49.25
Pathology	49.17
Geriatrics	48.12
Psychiatry	46.61

Table 6
Summary of Multiple Regressions Predicting
Overall Accuracy of Symptom Recall

Predicted from Patient Characteristics Effect of Patient Characteristics	$r^2=.101$ $F(3,76)=2.85, p<.05$
Predicted from Patient Characteristics + Intentions Direct Effect of Intentions	$r^2=.207$ change in $r^2=.106$ $F(10,69)=1.32, n.s.$
Predicted from Patient Characteristics + Intentions + Attitudes Direct Effect of Attitudes	$r^2=.289$ change in $r^2=.082$ $F(14,65)=1.87, n.s.$
Predicted from Patient Characteristics + Intentions + Attitudes + Beliefs Direct Effect of Beliefs	$r^2=.351$ change in $r^2=.062$ $F(21,58)=.794, n.s.$
Predicted from Patient Characteristics + Intentions + Attitudes + Beliefs + Medical School Direct Effect of Medical School	$r^2=.353$ change in $r^2=.002$ $F(22,57)=.150, n.s.$

FIGURE 1
INTERACTION OF PATIENT AGE AND GENDER
ON MEDICAL STUDENTS' RATINGS OF INTEREST/ENJOYMENT

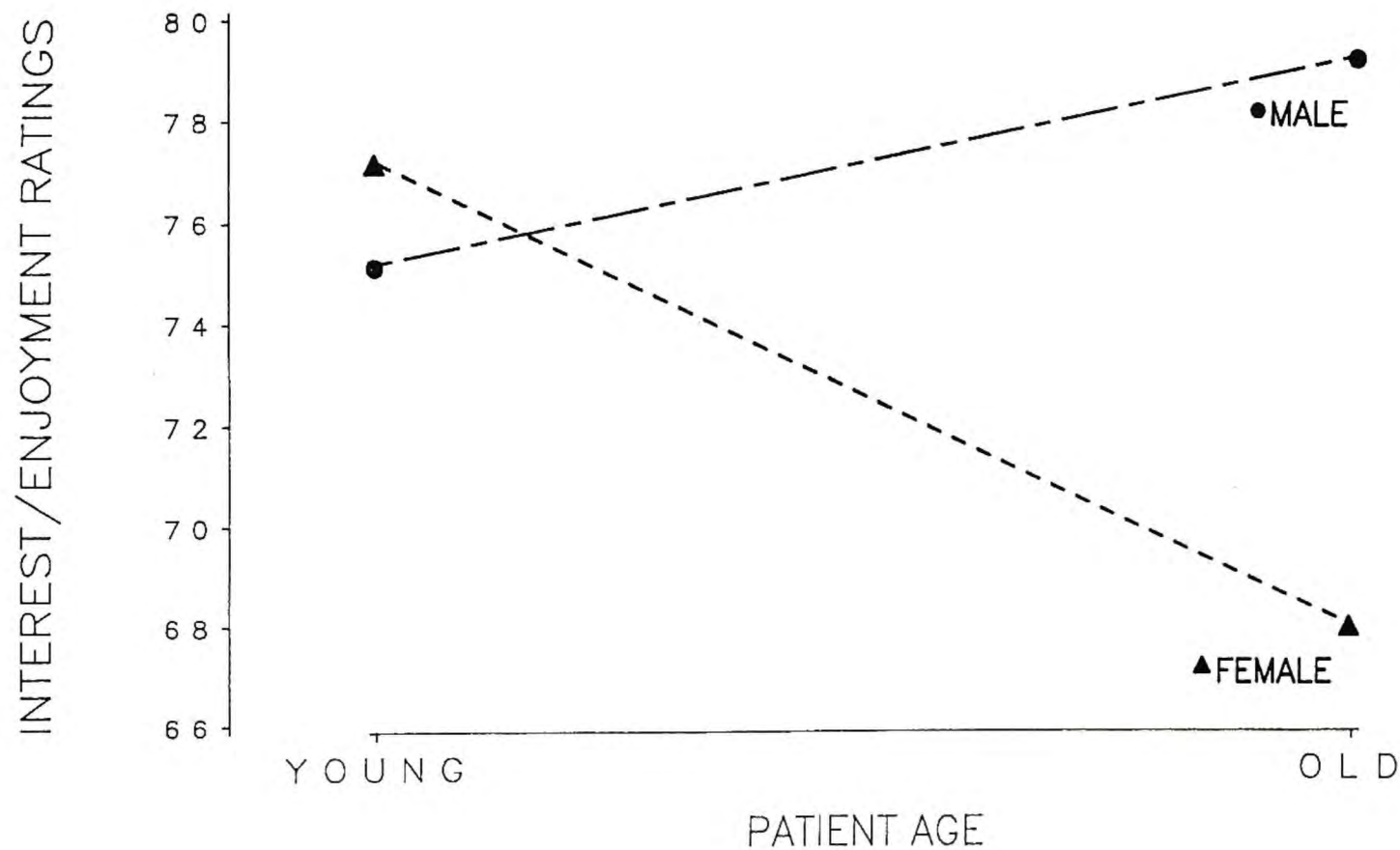


FIGURE 2

INTERACTION OF PATIENT GENDER AND SYMPTOMS OF DEPRESSION
ON LIKELIHOOD OF COUNSELING AND REASSURANCE

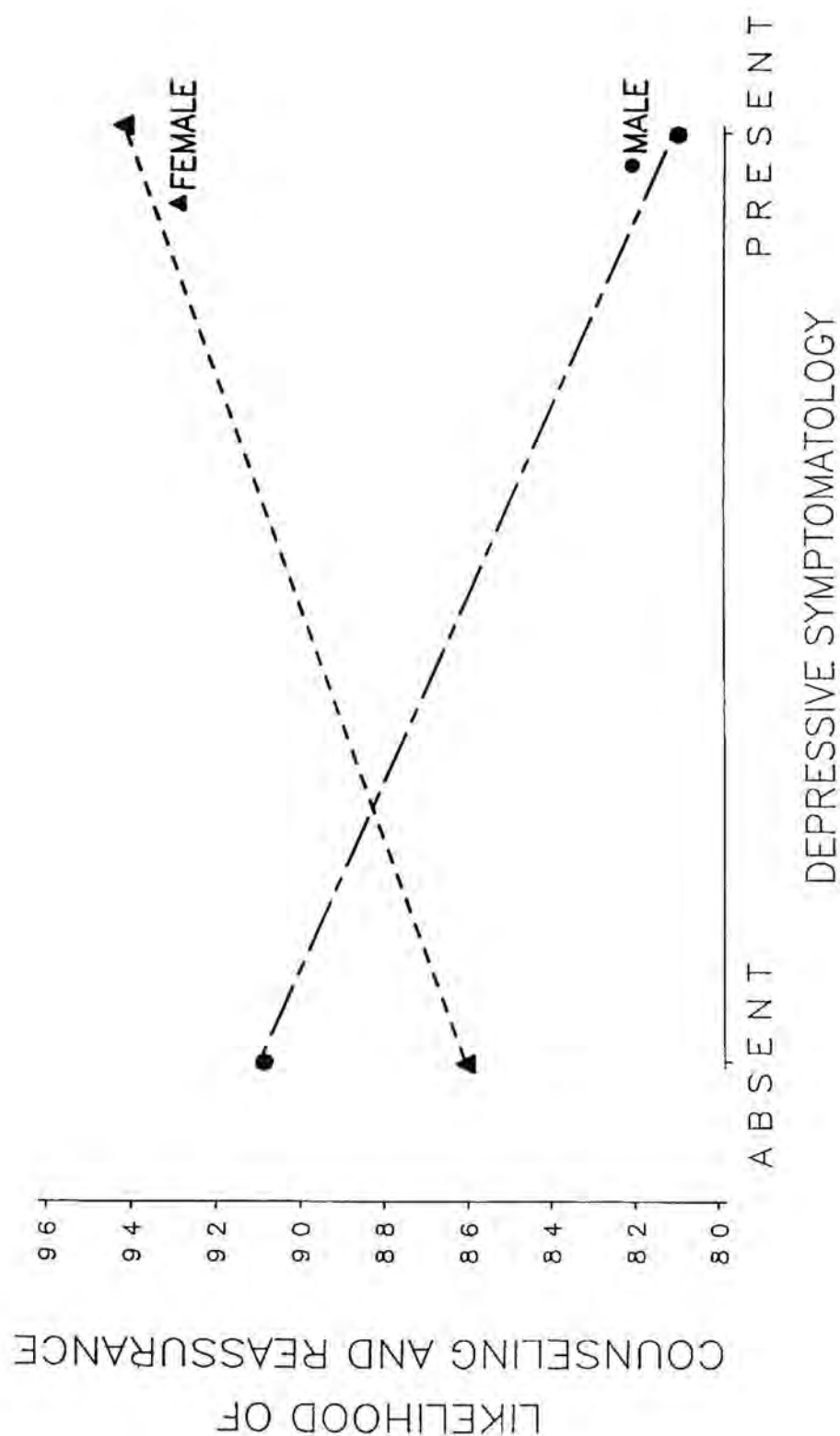


FIGURE 3
INTERACTION OF PATIENT GENDER AND SYMPTOMS OF DEPRESSION
ON LIKELIHOOD OF INITIATING A CONSULT WITH ANOTHER PHYSICIAN

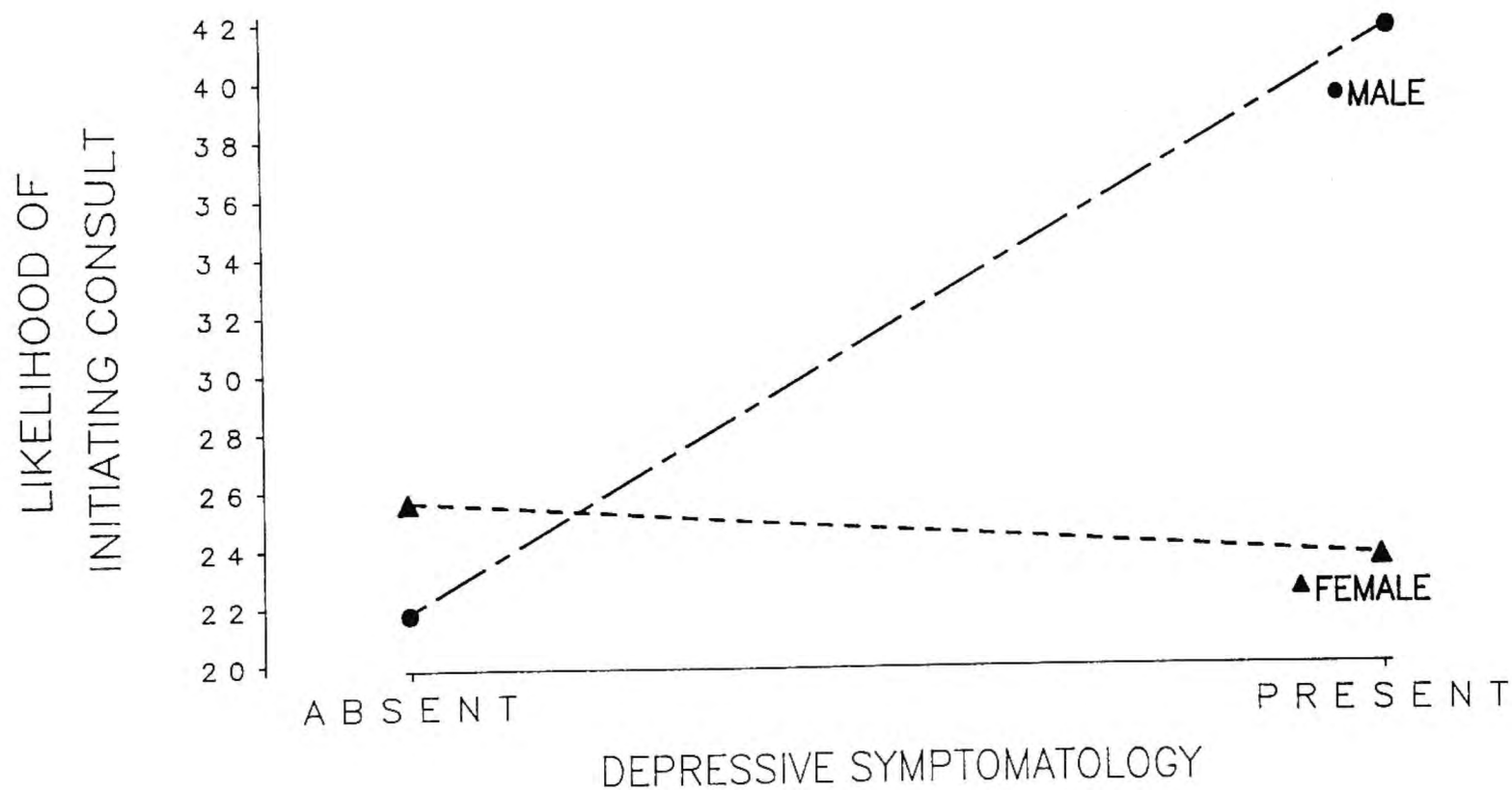


FIGURE 4
INTERACTION OF CHOICE OF SPECIALTY AREA
AND PATIENT AGE ON PERCEPTIONS OF AMOUNT
OF TECHNICAL SKILL NEEDED

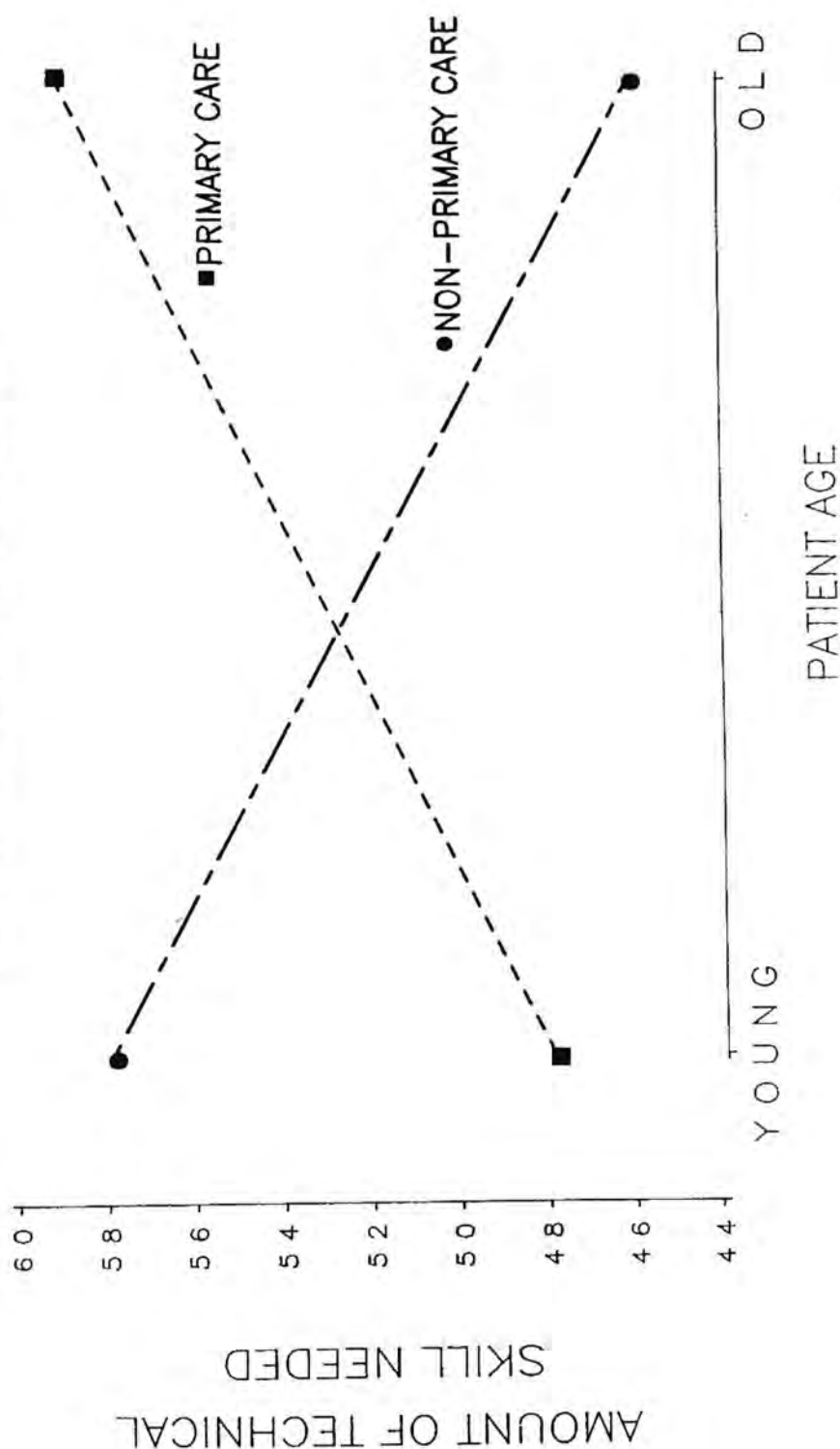


FIGURE 5
INTERACTION OF PATIENT GENDER, DEPRESSIVE STATUS, AND MEDICAL
STUDENT GENDER ON BELIEF THAT THE PATIENT IS A HYPOCHONDRIAC

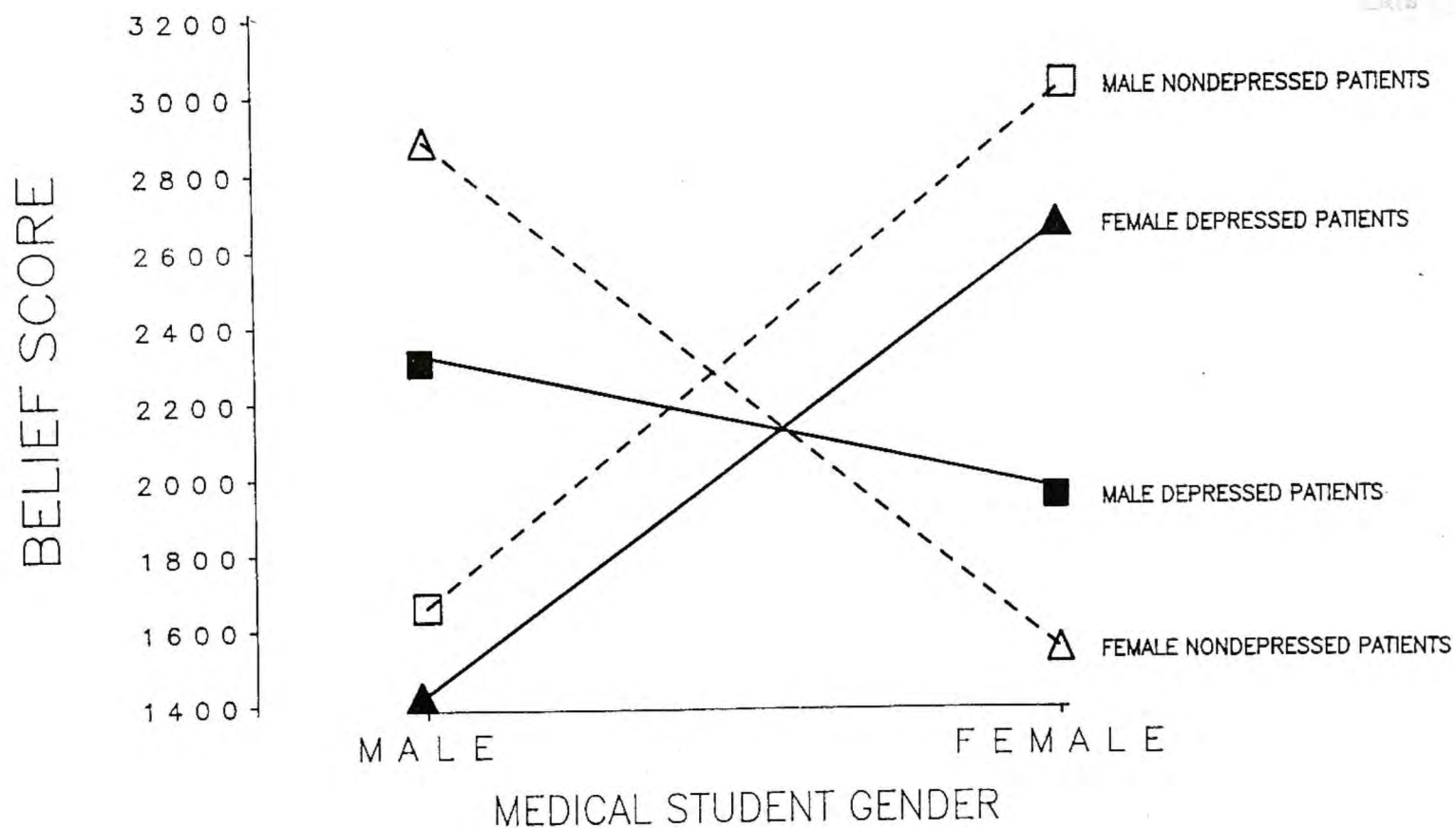


FIGURE 6
INTERACTION OF PATIENT AGE, DEPRESSIVE STATUS, AND MEDICAL
STUDENT GENDER ON THE NUMBER OF SYMPTOMS INCORRECTLY IDENTIFIED

